ESTABLISHED IN 1872

# PAPER TRADE JOURNAL

With Which Is Combined

PAPER

Vol. XCIX, No. 18 Thursday, November 1, 1934

# Canadian Newsprint Problem More Complicated

## United States Newspaper Publishers Protest Interference of L. A. Taschereau, Premier of Quebec, In Price Situation—Official View In Ottawa Reported to be That Remedy for Their Plight Lies Within Power and Opportunity of Leaders of Industry Itself—Premier Sets Forth Position of Industry In Serious Language

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., October 29, 1934—The pot is still boiling in the newsprint industry here. The situation admittedly has been complicated by the protest by representatives of United States publishers against the interference of Premier L. A. Taschereau of Quebec in the price situation.

As matters stand now there appears three possible developments—1, an agreement between the newsprint producers and the publishers on a more reasonable price than the $40 a ton said to have been accepted by one company —2, financial inability of the producer to fulfil the obligation to maintain the $40 a ton price through 1935—3, government intervention.

The first hinges on a change of attitude on the part of the American Newspaper Publishers' Association, admittedly highly problematical. The second it is thought might be precipitated if the existing discount on the U. S. dollar in relation to Canadian funds continues or goes higher. The third would be a last resort which none of the parties would welcome.

### Premier Replies to Protests

Meanwhile Premier Taschereau has replied to the protests of American publishers by setting forth the position of the industry in serious language. His statement is as follows:

"We cannot expect the United States publishers, members of the American Newspapers Publishers' Association, to receive with any marked enthusiasm the move of this Government to see to it that there is a moderate increase in the price of newsprint as warranted by the duty of the Province of Quebec to protect that industry and by increasing costs and the increasing needs of our workmen.

"But the American publishers are business men, and surely they will realize that for the Province of Quebec the newsprint industry is a business, and must be run along business lines. At the present price for newsprint, there is no profit for our Canadian mills, Canadian and American money has been invested in this all-important industry, and at present newsprint prices there is no return for such investments; dividends are not being paid. This is not just.

"During the Great War, newsprint sold at a price as high as $140 a ton, and the newspapers survived regardless of that price. Now, the price of newsprint has dropped to as low as $40 a ton.

"It is the duty of the Government to try and take measures to see to it that the mills survive and carry on. They are fed by the natural resources of this province, and we are not going to allow our forests to be bared without profit to those exploiting them.

"It is to be hoped that producers and publishers will understand this, and will come to an agreement to the benefit of both parties.

"It is no question of intervening in existing contracts made with Quebec companies. We will recognize those already made. But I repeat: We do not want to see our natural resources sacrificed.

"It is most surprising, incidentally, to see raised in the United States opposition to the Quebec Government's move in regard to newsprint prices, when, as a matter of fact, all industry and commerce in the United States has been subjected to governmental control through NRA codes.

"It will be wiser for the publishers to understand the position of Quebec's newsprint industry, than to force Quebec to ask the Federal Government to control exports of newsprint. It will be remembered that during the last session of the Federal Parliament a law was adopted by which the Federal authorities can prohibit export of certain produce unless it is sold at a certain price.

"I hope that such action will only be necessary as a last and drastic resort."

### Dominion Watchfully Waiting

The position of the Dominion Government is one of watchful waiting. While earlier in the year the Government discussed the matter of possible action regarding the newsprint industry on a number of occasions with provincial representatives, it is said that no approach to the Federal authorities has been made in recent weeks. The official views in Ottawa is said to be that a remedy for

*(Continued on page 47)*

# PremierHepburnAnswersNewspaperPublishers

## Declares Newsprint Paper Is Being Sold Today at Prices Which Bring No Proper Compensation to Public Treasury—States Continuance of Prevailing Conditions Would Mean Further and Complete Destruction of Great Canadian Industry

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., October 29, 1934.—"I have read the statement made by the directors of the American Newspaper Publishers' Association," said Premier Hepburn in a public statement in regard to the newsprint industry in Toronto this week, "and I believe that they have not taken into account all the elements involved in the present situation. As buyers of newsprint, they are, of course, anxious to purchase as economically as possible, and that is a natural objective for which no one can criticize them. Apparently, however, they do not understand that the paper which our newsprint companies sell them is manufactured from forests owned by the Canadian public. It is being sold today at prices which bring no proper compensation to the public Treasury, which preclude proper conditions of employment, and which mean the further and complete destruction of a great Canadian industry already harassed and impoverished.

"I hope that the publishers will yet pause to realize that these conditions cannot continue, and I hope that our manufacturers will be able to reach a reasonable and sensible settlement with their customers. I wish to make it clear, however, that it is the plain duty of a Government, whether in Quebec or Ontario, to take cognizance of this situation and to protect the public property for which it is legally and morally responsible. Premier Taschereau, in the position he has been obliged to take, is merely meeting this responsibility. The Government of Ontario will take no advantage of Quebec's difficulty nor of the resentment which the publishers have expressed.

"Our Government is wholly in accord with Premier Taschereau's attitude, and if necessity arises we shall do our full duty in a similar way. We have no alternative and we are ready to cooperate as completely as possible with the Government of Quebec or with the Federal Government to protect the public interest in the forest resources, which the public owns and of which we are the present trustees.

"The Government of Ontario in its disposition of the natural resources is intimately interested in the welfare and happiness of the workers responsible for the maintenance of manufacturing concerns, and cannot and will not detract from any well-directed and timely move towards frustrating attempts at price-fixing or reductions that may be ruinous to the trade and disastrous to the workers."

### Pulpwood Strike May Last All Winter

Ontario has never before experienced such a strike as is crippling the major part of the province's pulp and paper industry in Northern Ontario just now. Along an 800-mile front in Northern Ontario upwards of 1,900 Abitibi pulpwood workers have laid down their tools, abandoned most of the 32 camps affected, and are holding out for the granting in full of their long list of demands before returning to work. In the Cochrane area the strike of 1,100 bush workers is well into its sixth week with no sign of settlement. North of the Soo, along the Algoma Central Railway lines, another 800 men are carrying their strike into the fifth week and have rejected the Government's offer of mediation. At the Soo it is feared that the strike may last all winter and force the closing of the mills there. In the Cochrane-Iroquois Falls area the Abitibi company has let it become an open secret that none of the strikers will be re-employed except at the same wages they were getting before the walkout. Of fifteen camps formerly operating, at least twelve are said to be virtually closed down. One or two of the others are working with fewer hands.

### Hinde & Dauch Showing Gain

There are promising factors in the outlook for operations of Hinde & Dauch Paper Company of Canada for 1934. Expectations are that the company will report a healthy improvement in earnings over 1933 when 26 cents a share was shown earned on the common stock. A constructive factor in early prospects for the company is the increased demand for beer containers arising from broader sales of beer in Ontario. At first it appeared that this business would be lost to the manufacturers of paper cartons since wooden boxes were favored by the breweries. Hotels, however, prefer the paperboard carton since it is collapsible and takes up little space and this has resulted in a swing back to this type of container to the benefit of the Toronto paper box concern.

### Canadian Pulpwood for France

A. S. Poirot, purchasing agent for a French pulpwood importing concern, who has been in Canada this summer, has stated that trial shipments of Canadian pulpwood had been purchased by his principals and that this wood would go forward at once. Mr. Poirot said that of the total 16,000 cords, lots of 2,000 cords would be shipped from Chandler, Que.; Moncton, N. B., and Halifax, N. S. The balance of the trial order will be shipped from Newfoundland. Mr. Poirot, in speaking of this trial shipment, said that unsettled business conditions in Finland and Soviet Russia, coupled with the political situation existing at present, had prompted his firm to investigate the Canadian source of supply.

### Test of Tasmanian Wood at Ocean Falls

Tests made on Tasmanian gumwood at the Ocean Falls plant of the Pacific Mills, Ltd., are reported as "particularly promising" by officials of the company. These tests are being watched with much interest in British Columbia as it is realized that if successful they may have a far-reaching effect on British Columbia export trade in pulp and paper in years to come. John A. Young, vice-president of Pacific Mills, at whose plant the tests were made, refused to comment on the possibilities of immediate construction of a mill by Australian and New Zealand promoters. He was quick to point out, however, that the result of the tests does not mean that domestic newsprint can be manufactured in Australia for the Antipodean trade at present price levels. Interests in Australia and New Zealand have been experimenting for some time in commercial prices. One syndicate actually bought the complete model paper making machine at the British Empire Exhibition and transported it to Australia. Newsprint was manufactured on this machine, but not

in commercial quantities. Kraft papers, however, are already being made in Australia.

**Notes and Jottings of the Trade**

While visiting in Iroquois Falls a few days ago, the Hon. L. J. Simpson, Minister of Education for Ontario, and Mrs. Simpson were shown through the Abitibi Power and Paper Company's plant, as the guests of the general manager, T. E. Silver.

The Toronto office of the Valleyfield Coated Paper Mills, Ltd., Valleyfield, Que., have mailed out a very neat booklet of samples showing their recently introduced line of Val-Met-Al coated papers and boards for the paper box trade.

Don Valley Paper Mills, Toronto, have just closed a very successful year with a fifteen per cent. increase in sales over last year. The company specializes in cover, tag manilas and blotting papers.

The charge that the bush strike in the Abitibi Power and Paper Company camps near Sault Ste. Marie, Ont., is the work of a group of four Reds was made at a meeting of the Soo City Council by Mayor James Lyons, who implied that the Ontario Government was doing nothing to halt their activities.

Gordon Gunn Cosens, for the past six years chief forester and assistant woods manager of the Spruce Falls Pulp and Paper Company at Kapuskasing, Ont., has been appointed assistant professor of forestry at the University of Toronto. Mr. Cosens was born at Clinton, Ont. 33 years ago and graduated from the faculty of forestry in 1923. He is the first graduate student in the faculty at the University.

A number of wholesale paper merchants of Toronto attended the monthly meeting and dinner of the Toronto Club of Printing House Craftsmen at the Royal York Hotel on September 26 when many echoes of the successful international convention of the body in Toronto recently were heard.

Lebaron Dibblee, former Ontario Government city relief inspector at Sudbury, Ont., died in that city on October 9. The remains were taken to the family home in New Brunswick where the funeral took place. The late Mr. Dibblee was 56 years of age and was employed at Espanola by the Spanish River Pulp and Paper Mills. When the Abitibi Power and Paper Company took over Spanish River he was transferred to the Abitibi Canyon Development. While resident in Espanola he was a conservative candidate in the provincial elections of 1926.

As evidencing the popularity of T. A. Weldon among the paper men of Hamilton, Ont., the much-liked vice-president of Provincial Paper, Ltd., was entertained at dinner by a number of the distributors and others, as marking his emergence from hospital following an illness, and presented with a handsome cane.

George C. Derick, who has represented W. J. Gage & Co., Ltd., Toronto, for over forty years, and Mrs. Derick celebrated the fiftieth anniversary of their wedding recently. A reception was held at their home in Clarenceville, Que., when they were greeted by many old friends.

Recent western paper men to visit Toronto were T. D. Graham, of the Barber-Ellis Company, Ltd., and C. J. Kay, of the Columbia Paper Company, Ltd., Vancouver.

Preparations are already being made for the first annual meeting of Canadian Wrapping Paper Distributors Association, which will be held in Montreal in January. The exact dates have not yet been fixed.

## Container Corp. Reports Good Earnings

Container Corporation of America reports estimated consolidated net income of $164,002 for the third quarter ended September 30, 1934, and of $762,861 for the nine months ended September 30, 1934, after deduction of selling and administrative expense, interest, depreciation, federal taxes and reserves for year-end adjustments. In the calculation of these estimates credits arising from the acquisition of bonds, debentures, and preferred stock at a discount and charges resulting from retirement of buildings, machinery, and equipment have been treated as surplus adjustments. This compares with a net income of $290,958 for the corresponding quarter and of $50,781 for the nine months of last year estimated at the time on a similar basis except as noted below.

Attention is directed to the fact, as reported at the end of the first quarter, that the corporation in computing net income for the periods in 1934 has provided depreciation in larger amounts than in previous years. This increased charge amounts to $138,383 for nine months of 1934 as compared with the corresponding nine months of 1933.

In arriving at estimated net income for the periods in 1934 the company has, in each month, deducted a provision averaging approximately $27,000 per month to cover such year-end adjustments as losses on doubtful accounts, losses on adjustment of book inventories to physical inventories, etc., as compared to a similar provision of $20,000 per month made in estimating net income for periods in the preceding year. While the amount of the provision made during 1933 was required in connection with adjustments made at the close of the year, it now seems probable that the provision made during 1934 may be more than will be required, in which case, barring unforeseen contingencies, any unused balance will be added back to profit and loss at the end of the year.

The dollar sales volume for the nine motnhs ended September 30 this year was $12,807,456, compared with $10,600,901 for the first nine months of 1933. This is an increase of 20.8%. Unit sales volume in this period was 8.6% below the nine months of 1933.

Following the trend of general business conditions our dollar sales volume during the third quarter was less than in the preceding quarter and considerably below the sales volume of a year ago. October dollar sales volume, however, probably will exceed that of last year.

The price trend has been moderately downward, which has been partially offset by a similar lower price level on paper stock, our principal raw material.

The corporation is paying throughout its plants higher wages than required under the various codes under which it operates, and in consequence labor relations are currently harmonious.

The immediate outlook indicates a reasonably satisfactory October, and the usual seasonal decline in the last six weeks of the year. Total profit for the year should exceed last year's small earnings by a fair margin.

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## E. H. Larkin to be Vice President of Bryant

KALAMAZOO, Mich., October 29, 1934—The Bryant Paper Company announces the election of E. H. Larkin as vice president of the company. Herb, as he is known to a host of friends in the paper trade, has been manager of the Chicago office of the Bryant Paper Company for several years and will continue as divisional sales manager in charge of this office in the Daily News Building.

# Boston Paper Market Conditions Improving

## Demand for Both Fine and Coarse Papers Shows Increasing Betterment—Box Board Situation Relatively Quiet, With Quotations Steady to Firm—Paper Stock Market Continues Dull, Although White Blank News and Envelope Cuttings Are Active

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., October 29, 1934.—Business, with a few exceptions, was good in the local paper market during the last week. An executive at a prominent house handling both fine and wrapping paper said that business was "holding up very nicely. It is surprising how business has shown an increasing improvement since the latter part of September and through October." It is regarded as a good sign that the demand has kept up so well the last four or five days of the month. At the office of a manufacturer of both fine and kraft papers, it was intimated that there was a good volume of sales in both, but that kraft was "showing the best action just now." Others state that orders for paper are more numerous, but the "volume is not there," that the market is spotty, "a little more volume than in the previous week," and "a little better than last month, nothing to be alarmed about." The call for box coverings is rather fair. Box board was rather quiet, and generally marking time, although October showed an improvement over September. Prices remained firm, as for a considerable period.

Under paper stock, a considerable tonnage of white blank news moved, with the price advancing to 1.25@1.30. The market was very active in this grade. Envelope cuttings also moved actively at 2.50@2.65. Outside of these sales, the market was rather quiet in old papers, and, in fact, in bagging, new and old domestic rags and foreign rags. Mixed papers moved in very limited amounts. The minimum price requirements for mixed papers and old newspapers is regarded as a joke by some, because board mills do not have the business warranting their paying the figures set.

### Paper and Cordage Men Honored

The following from the paper and cordage trade were chosen as members of the executive committee of the Associated Industries of Massachusetts at the annual meeting of the organization at the Copley-Plaza Hotel Wednesday afternoon: B. Preston Clark, vice-president, Plymouth Cordage Company, Boston; Irving N. Esleeck, president, Esleeck Manufacturing Company, Turners Falls; Lafayette C. Reynolds, comptroller and assistant to the president, American Writing Paper Company, Holyoke, and Willard E. Swift, president, United States Envelope Company, Worcester.

### News of the Trade

The American Writing Paper Company is placing on the market Bessemer Bristol, a new line of tag stock in fourteen colors, including brilliant ones, which has already been put in stock by four New England houses. Bessemer Bristol is a strong sulphite sheet of moderate price.

The Arnold-Roberts Company has stocked a new brand of paper, Paxton Bond, made by the Millers Falls Paper Company, Millers Falls, Mass. This line is a 100 per cent sulphite sheet, with cockle finish.

Frank B. Cummings, executive secretary of the New England Paper Merchants Association, who has been confined to the house by illness, is able to come to the office.

Ray P. Mitchell, formerly salesman in the New England territory for the Riegel Paper Corporation, whose offices are in New York City, has been promoted. Paul M. Beach, formerly of the Southern territory, is to take Mr. Mitchell's place in New England.

T. Stewart Foster, president of the Foster Paper Company, Utica, N. Y., called on the trade two days last week.

Reynolds Brothers Corporation has opened an office at 310-312 Congress street, to deal in all yarns, twines and cordage.

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## Indianapolis Demand More Active

[FROM OUR REGULAR CORRESPONDENT]

INDIANAPOLIS, Ind., October 29, 1934—Demand, particularly from the local jobbers, seemed a trifle more active in the paper trade last week. Fine paper demand increased somewhat and the inquiries are expanding. Some of the demand lately has been coming from inquiries received a while back, leading the jobbers to feel that present inquiries are certain to lead to future business. It is apparent there will be quite a bit of direct mail material sent out before the holiday season. Local printers now are working on a lot of this matter. They also have begun working on quite a lot of catalogue material for the new year. All this has meant some fine paper being sold.

Paper box and container business continues good. Reports from some of the larger factories of the state show they are working practically to capacity and are contemplating no cessation of operations unless for a short period around the first of the year when inventories are taken. It is quite possible this suspension will be of shorter duration than usual due to activity of orders and the fact that warehouse stocks are kept low.

Bags and wrapping paper are moving steadily. Demand for bags from the cleaning trade has held up well, the fall season reported to be much better than the summer season. Roofing papers still hold on well due to a late fall which has stimulated repair work. Jobbers are confidently expecting all building papers to really show something in the spring.

Newsprint demand is increasing somewhat. The last report of lineage throughout the state shows substantial gains in virtually every town and city in the state. These gains are expected to be held during the remainder of the year.

Paper jobbers are not entirely satisfied with the situation. Prices offered by mills particularly on common paper stock, are very low and mill demand is unsteady. There is some demand for good grades of paper and for white shirt cuttings and good rags.

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## To Be Philadelphia Manager

The Terry Steam Turbine Company, whose main office and works are in Hartford, Conn., announces the appointment of Henry D. Bevan as manager of the company's Philadelphia district office at 1109 Otis Building, 16th and Sansom streets. Mr. Bevan was formerly assistant manager of the Terry Steam Turbine Company's New York office.

# Demand for Paper Slowly Improving In Chicago

## Slight Upward Movement Experienced In Fine Paper Market—Book and Cover Papers Arousing More Interest—Kraft Wrapping Paper Generally Firmer—Stability of Newsprint Paper Situation Believed Imminent In Some Quarters

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., October 29, 1934.—Business conditions in the Chicago area continue to improve slowly, the paper industry experiencing its part of the gain. While a part of the improvement is admittedly psychological there is yet sufficient actual betterment to give considerable encouragement to local paper executives. Reports indicate that all known "scares" are about out of the way and that a stabilization of markets has kept abreast of an encourging demand from a greater volume of consumers. The very paucity of news, except for reports of increasing volume and inquiries, indicates that the market seems to have settled down to work itself out side by side with general business. The newsprint executives expressed satisfaction not only with reports of greatly increased advertising lineage but with the reports that stabilization of the market was imminent. Ground woods were reported to be receiving the good effects of the news.

The kraft market reported a satisfactory firmness with local distributors finding consumers much more willing to make long-needed commitments to fill out some pretty bare shelves. Fine papers experienced a slightly upward improvement during the week while book and cover papers found nothing to regret in developments of the past week. The paper board market was said to be in stronger shape. The waste market was reflecting the slight increase all around.

### Salesmen Want Code Decisions

One of the chief topics of conversation among sales executives in this territory is their inability to learn of code decisions relative to the sale of paper until they have already been embarrassed by making wrong interpretations to the consumer trade. These sales executives definitely want the mill executives; code authorities and various associations dealing directly in code matters to cooperate in giving the selling forces immediate information on such matters. They feel, according to many statements made, that they are constantly in danger of making errors in sales and in the representation of merchandise that might easily be avoided if the ones who have to do the explaining and the final selling were provided with complete and up-to-date information on code items.

"The action of authorities and of mill executives in delaying information concerning decisions made in various meetings," says one sales executive, "means that we must go out to the trade exceedingly ill equipped to give out authoritative information and very vulnerable to the demands of consumers, who, oftentimes, are much more well informed than we." The sales representatives add that they feel themselves in a position to do a great deal of good by being kept abreast of all code developments relating to sales in particular. That such information will permit them to counsel and assist in bringing about the proper development of the code and its purposes that all are so anxious to see developed.

### Container Corp. Reports Earnings

The Container Corporation of America this week reported an estimated consolidated net profit for the quarter ended September 30 of $164,002 as compared with a net profit of $307,169 in the preceding quarter and $290,958 in the like 1933 period. Estimated net for the nine months was $762,861, against $50,781 in the corresponding 1933 period. Dollar sales volume for nine months ending September 30 was $12,807,456, compared with $10,600,901 for the corresponding period in 1933. Unit sales volume was 8.6 per cent below the 1933 period.

### Paperboard Association to Meet

From the headquarters offices of the National Paperboard Association at 608 South Dearborn street, comes the word that the annual meeting of the association will be held at the Waldorf-Astoria Hotel in New York City on Thursday, November 15. The association's initial session will be held at 10 a. m. the morning of the 15th. The meeting is called for the election of officers for the ensuing year and for taking such other action as is specified in the by-laws of the association. Important subjects are to be considered at this meeting, including a program of association activities for the coming year, according to H. S. Adler, secretary of the association.

### News of the Trade

Included in the list of trade executives lined up to assist Chicago in raising a $3,000,000 community fund to be distributed to private charities in the city, is Harry A. Washburn, president of the Messinger Paper Company, who has charge of raising funds for this purpose among the paper and book supply trades in the city.

Alexandra Japan, distributed in Chicago by the Swigart Paper Company, a new Strathmore product, is announced in a recent mailing from the Chicago concern. Quality is stressed as a characteristic of the paper as well as a most welcome characteristic of modern merchandising. The unusually attractive folder describing Alexandra Japan carries a swatch page describing the white and cream antique and plate finishes in which the advertising paper is carried.

From the S. D. Warren Company comes an announcement concerning the series of printed pieces titled "The Warren Merchandise Demonstrations," four-page signatures containing demonstrations of photographic reproductions of different kinds of merchandise.

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## Sherman Paper Co. May Get Large Contract

[FROM OUR REGULAR CORRESPONDENT]

GREAT BEND, N. Y., October 29, 1934—Negotiations for a large contract for paper are reported to have been virtually completed by the Sherman Paper Company which will enable steady operations for some time. Operations have been practically at a standstill since late in 1932 except for the production of groundwood pulp for the market at various intervals. An official declared that negotiations for the contract were under way although there was no reason for any excitement as yet among local residents. The company produces specialties and a number of men will be recalled if the contract is secured. Meanwhile operations will be continued as heretofore until conditions improve. The main mill is located at Felts Mills and a groundwood plant is operated at Lefebvre.

# Philadelphia Paper Market Outlook Brighter

## Both Fine and Coarse Paper Divisions of Industry Register Distinct Gains—Local Paper Merchants Prepare to Expand Operations for Forthcoming Holiday Season—Converting Plants More Active—Demand for Paper Stock Continues Listless

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., October 29, 1934—Comparison of the present with the past month reveals the fact that there is a distinct gain in both the fine and coarse divisions of the paper industry. Distributors state that inquiries are materializing into actual business with frequent rush shipments. And the wholesale trade is preparing to expand operation for the coming holiday season. Converting plants likewise are expanding. Bag manufacturers have sizable orders but after a somewhat spotty summer market are resting on their oars awaiting the outcome of the 60-day suspension of the open price reporting plan. In the waste paper trade, weakness prevails because of the failure in demand on the part of the mills.

### Work of Credit Association

Miss Evelyn McLaughlin, the very efficient young lady who is charged with the responsibility of the Credit Association of the Paper Trade Association under the auspices of the Typothetae of Philadelphia reports that close to Two Hundred Thousand Dollars has been paid into this division since its inception almost a year ago. This has been most gratifying to the paper merchants. Just this past week Miss McLaughlin paid a visit to Irwin Slote, secretary of the Paper Association of New York City and executive counsel for the Code Authority, in conjunction with Arthur Kolby in charge of Graphic Arts Division of the Credit Merchants Association, who are working with her department on a reciprocal basis. Washington also honor this division's delinquent list, which is issued monthly.

### Cleveland Container Payroll Stolen

The Cleveland Container Corporation, Water and Jackson streets, was visited by two dapper young bandits this past week, taking a payroll of $583 and escaping in an automobile. They found the money after they had threatened to kill the paymaster when he refused to tell them where the money was hidden. The bandits searched the office for several minutes without finding any money and then threatened to kill Andrew Jacks, accountant and paymaster, unless he told them where it was. Jacks refused and the robbers a moment later found the cash in a black container concealed in a cabinet. Grabbing the container they backed out of the place and fled in an automobile which was standing at the curb. The money had just been brought to the office from a bank and was to have been used later in the day to pay the company's thirty employees.

### Scott Paper Co.'s Earnings Up

Scott Paper Company, of Chester, reports net profit of $700,336 for the first nine months this year. This amount, is equal, after payment of preferred dividends, to $3.51 a share on 168,864 shares of common stock outstanding at the end of the period. It compares with net profit of $659,957 for the nine months ending October 1, 1933, equal after preferred dividends to $3.23 a share on common stock. Net profit for the three months ended September 30, 1934, was $281,165, equal after preferred dividends to $1.45 a share on common, compared with net profit for the three months ended October 1, 1933, of $276,290, equal after preferred dividends to $1.42 a share on common.

### News of the Trade

T. H. B. Smythe, president of J. L. N. Smythe Company, and of the Paper Trade Association of Philadelphia, is confined to the Chestnut Hill Hospital, where he has just undergone an operation for appendicitis.

Henry Henzel has recently joined the selling force of the fine paper department of the J. L. N. Smythe Company. Howard J. Beckett, executive secretary of the National Paper Box Manufacturers Association, has just returned from Chicago, there he attended a meeting of the Code Council.

In a recent issue of the PAPER TRADE JOURNAL mention was made of the appointment of the Hooper Paper and Twine Company, 105 Church street, as exclusive distributors for the Hampshire Paper Company, South Hadley Falls, Mass., of their new 25 per cent rag bond in white and five colors. The name of this 25 per cent bond is Dartford.

Leslie C. Bartlett, chairman of the entertainment committee for the Paper and Cordage Association and president of the Eastern Paper Company, 401 North Broad street, who has been vainly trying for eighteen years to catch a channel bass, had his hopes realized recently when he pulled in a 38-lb. channel bass from the surf at his seashore home at Seaside, N. J.

Frederic I. Brower, treasurer of the Philadelphia Paper and Cordage Association and mill representative for Atlantic Gummed Paper Company and Hopper Paper Company, has just returned from a visit to the mills in Virginia and North Carolina. He reports favorable business conditions and much better feeling prevailing throughout the trade.

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## Holyoke Water Power Co. Meets

[FROM OUR REGULAR CORRESPONDENT]

HOLYOKE, Mass., October 30, 1934.—The annual meeting of the Holyoke Water Power Company was held last Thursday wtih dinner for 100 stockholders at the Hotel Nonotuck. The annual report showed net operating revenue of $264,575, a gain of over $24,000 over the year previous. Stock dividends were $288,000—$12 a share on 24,000 shares outstanding. The following officers were elected: President and treasurer, Robert E. Barrett; vice-president, George G. Bulkley of Springfield; assistant treasurer and clerk, Ralph A. Smith; assistant clerk, Miss Mary U. McGrath. The directors are Edward Milligan, Hartford; Walter L. Goodwin, Hartford; George Dwight Pratt, Springfield; Robert E. Barrett, Charles A. Goodwin, Hartford; George G. Bulkley, Frank A. Wood, Frederic M. Jones, Springfield; Bentley W. Warren, Boston.

# Delaware Valley TAPPI Discusses Beating

The 24th regular meeting of the Delaware Valley Section of the Technical Association of the Pulp and Paper Industry was held at the Engineer's Club, in Philadelphia, Penn., on Tuesday evening, October 23, 1934, with Harvey P. Cannon of the Container Corporation of America presiding. About eighty members and guests were present.

After an enjoyable dinner, chairman Cannon opened the first meeting of the year with a greeting to the members and introductions of those guests present. The section was honored by the presence of the following visitors:

H. J. Rowley, Anglo-Canadian Pulp & Paper Mills, Ltd., Quebec, who is a member of the advisory council, and chairman of Ground Wood Committee and Fundamental Research Committee of the Canadian Pulp & Paper Assn. Technical Section.

J. Orley Mason, past president of the Canadian Pulp and Paper Technical Association, formerly General Manager of the Lawrentide Company and now with the Mead Corporation.

Richard Rimbach, managing editor of Instruments Publishing Company, New York.

Miss Lois Hans, of Pettengill, Inc., New York, N. Y.

Mr. and Mrs. C. R. Crawford of Middletown, Ohio.

B. W. Dean of Pittsfield, Mass.

The following committees and their respective chairmen for the year were announced:

Program Committee: D. M. Sutherland, Jr.

Membership Committee: Dr. H. C. Schwalbe.

1935 Problem Research Committee: J. d'A. Clark.

C. R. Crawford, of Shartle Brothers Machine Company, Middletown, Ohio, then presented a paper on "Refining of Stock for Paper," which was a discussion of necessary equipment for the modern paper makers who want efficient low power application of new methods.

Following this B. W. Dean, of E. D. Jones & Sons Co., Pittsfield, Massachusetts, presented a paper on "Beater and Jordan Development." This paper presented the latest developments in modern beaters and jordans.

The meeting was then thrown open to discussion and the number of questions raised by the members indicated intense interest in recent development of stock preparing equipment. Both speakers pointed out that the newer designs permit very accurate control of the type of stock desired, with a tremendous increase in output of prepared stock per horsepower expended over that of the older type units.

Among those present were:

Edw. J. Albert, Manager, Thwing Instrument Company, Philadelphia; H. W. Alden, Lowe Paper Company, Ridgefield, N. J.; John B. Allen, Chromium Corporation of America, Waterbury, Conn.; J. Frank Barter, 1317 Spruce street, Philadelphia; H. L. Becher, Agasote Millboard Company, Trenton, N. J.; Maxwell H. Boyce, DuPont Company, Wilmington, Del.; F. W. Brainerd, Scott Paper Company, Chester, Penn.; H. M. Cannon, Container Corporation of America, Manayunk; J. W. Carey, Congoleum-Nairn, Inc.; J. M. Chestnutt, McDowell Paper Mills, Philadelphia; James d'A. Clark, Scott Paper Company, Chester, Penn.; R. M. Cobb, Lowe Paper Company, Ridgefield, N. J.; Mrs. C. R. Crawford, Shartle Brothers Machine Company; C. R. Crawford, Shartle Brothers Machine Company; B. W. Dean, E. D. Jones Co., Pittsfield, Massachusetts; L. F. Derr, 111 No. 3rd street, Philadelphia; Gould Pump, Inc.; Jacob Edge, Downingtown Manufacturing Company; Emerson N. Glauner, Downingtown Manufacturing Company; Miss Lois Hans, Pettingill, Inc.; J. C. Harper, Jr., the West Jersey Paper Mfg. Co., Camden; Garrett F. Hom, Messinger Bearings, Inc., Philadelphia; Wm. C. Jay, Sanitary Products Corporation, Philadelphia; L. Justice, Container Corp. of America, Manayunk; C. J. Kern, The Moore & White Company, Philadelphia; G. E. Landt, Continental Diamond Fibre Company; Edwin R. Laughlin, DuPont Company, Wilmington; William Marble, Container Corporation of America, Manayunk; I. O. Mason Mead Corporation, Chillicothe, Ohio; William R. Maull, Dill & Collins, Inc., Philadelphia; M. Craig Maxwell, McDowell Paper Mills, Manayunk; F. J. McAndrews, McDowell Paper Mills, Manayunk; Charles McDowell, McDowell Paper Mills, Manayunk; Jasper Purcell, McDowell Paper Mills, Manayunk; Walter P. Quinn, Container Corporation of America, Manayunk; Sam Reynolds, Container Corporation of America, Manayunk; Richard Rimbach, Instruments Publishing Company, New York City; C. W. Rivise, Caesar & Rivise, Philadelphia; John Roslund, Moore & White Company, Philadelphia; H. J. Rowley, Anglo-Canadian Paper and Pulp Mills, Ltd., Quebec; Claude J. Ryder, Downingtown Manufacturing Company; H. C. Schwalbe, Dill & Collins, Inc.; Ralph W. Shaffer, MacAndrews & Forbes Co., Camden; Wm. M. Shoemaker, Yorklyn, Delaware; Chas. A. Shubert, Dill & Collins, Inc.; Walter E. Snyder, Downingtown Manufacturing Company, Downingtown; A. E. Sprinkle, Congoleum-Nairn, Inc., Asbestos, Maryland; Fred Streicher, Dill & Collins, Inc., Philadelphia; D. M. Sutherland, Jr.; L. M. Sutherland, Sloane-Blabon Corp., Trenton; A. F. Sutton, Gould Pumps, Inc., Philadelphia; Mark Walker, MacAndrews & Forbes Company, Camden; E. N. Wennberg, Continental Diamond Fibre Company; D. A. Wickerham, Sanitary Products Corporation, Philadelphia; A. W. Wickham, MacAndrews & Forbes Company, Camden; F. E. Winslow, General Electric Company, Philadelphia.

## Paper Men Visit Orient

VANCOUVER, B. C., October 25, 1934—William Barclay, salesmanager, Powell River Company, Powell River, B. C. and Harry C. Pim, export manager, Pacific Mills Ltd., Ocean Falls, B. C. have sailed from their head office port of Vancouver, B. C. for the Orient on a joint mission of goodwill to buyers in the Far East.

Mr. Pim has visited the Orient annually for the past four years, while Mr. Barclay, who assumed the position of sales manager with the Powell River Company about one years ago, is making his initial visit. Their mission is largely in the nature of a goodwill tour for the purpose of cementing business friendships already established with Asiatic buyers, and establishing new contacts in China and Japan.

They will spend about three to four months visiting the principal cities of China and Japan and return by way of the Philippine Islands. They left Vancouver on the Empress of Japan on October 20.

## Roots-Connersville Blowers

Bulletin 22:23-B10 has just been issued by Roots-Connersville Blower Corp., Connersville, Ind., illustrating and describing the standard and heavy duty types of blowers.

# Obituary

### Edward W. Backus

Edward W. Backus, Western business man who rose from the position of bookkeeper at $9 a week to the control of companies estimated at one time to be worth $80,000,000, died suddenly on Monday at the Hotel Vanderbilt, New York. His death was attributed to a heart attack.

Mr. Backus, who resided in Minneapolis and was alone at the hotel, had been in New York since Friday on one of his frequent business visits. He would have been 74 years old on December 1.

Mr. Backus was born at Jamestown, N. Y., in 1860, the son of Mr. and Mrs. Abel Backus of that city. After attending the University of Minnesota, Mr. Backus went to work at the age of 21 as a bookkeeper for the firm of Lee & McCulloch in Minneapolis at a salary of $9 a week. A year later he purchased an interest in the firm and became a managing partner.

Under his direction the business was expanded through the purchase of two sawmills in Minneapolis. In 1884, when he was 23, Mr. Backus formed another company bearing his name. Six years later, with the aid of the late William F. Brooks, he organized the Backus-Brooks Company, capitalized at $3,000,000. His lumber interests were expanded to include power development and the manufacture of paper, with the Minnesota and Ontario Paper Company as parent organization.

In 1931 the Minnesota and Ontario Paper Company was petitioned into receivership. Thereafter he devoted much of his time to a legal battle to regain control of the property, charging in testimony given early this year before the Banking Committee of the United States Senate that there existed a conspiracy on the part of certain banks to deprive him of control of his enterprises by means of the receivership. Early this month the Federal District Court at Minneapolis issued an order continuing the receivership.

Besides the Minnesota and Ontario Paper Company, Mr. Backus had formed many corporations, including the International Bridge and Terminal Company, the Minnesota, Dakota and Western Railway, the International Insulation Company, the Fort Francis Pulp and Paper Company and the International Lumber Company.

Mr. Backus was active in Republican politics. He contributed to Republican campaign funds in his State and served as Republican Presidential elector in 1904. His clubs included the Minneapolis, Minikahda and La Fayette Clubs in his home city; the New York Athletic Club and the Congressional Country Club at Washington, D. C.

Mrs. Backus was the former Miss Elizabeth Horr of Minnesota. **Seymour W. Backus** is active in his father's business in Minneapolis.

Besides his widow and his son, Mr. Backus is survived by a brother, George Backus of Stewart, Fla., and two sisters, Mrs. Paul H. Kinports of International Falls, Minn., and Miss Mary Backus of Minneapolis.

### Richard Gray

[FROM OUR REGULAR CORRESPONDENT]

WATERTOWN, N. Y., October 29, 1934—Richard Gray, consulting engineer of the Bagley & Sewall Company, died suddenly this week at New Brunswick, N. J., where he was sent recently to supervise the installation of a machine built here for the Johnson & Johnson Company, producers of medical supplies. He was 67 years old and was born in London, Eng. He was graduated from Gordon's College at Aberdeen, Scotland, with high honors and a degree in mechanical engineering. During his youth he studied extensively and learned considerable about paper making machinery in Scotland.

When only 22 years of age he came to this country and in 1893 he entered the employ of the Bagley & Sewall Company. Soon afterwards he became recognized as an authority on subjects dealing with paper mill equipment and an expert erecting engineer. His services were in constant demand in various countries where the local company secured contracts and his ability won high commendation. Included in the countries where he supervised the installation of machines were England, France, Russia, Germany, Japan, Canada and China.

In 1929 he was sent to Russia to install machinery for the Russian government in the Volga Paper Mills at Belahkna. He returned after completion of the contract but was again sought by that country to complete the installation of machines in connection with a huge industrial project. He remained at Korza about a year and returned to this country in the summer of 1932. He also spent considerable time in France doing installation work and had traveled extensively in other parts of the world.

The principal survivors are his wife and three children.

### William F. Pickles

BUCKLAND, Conn., October 29, 1934—William Firth Pickles, inventor and manufacturer of attachments for paper-making machinery, died at his home October 24 after a long illness. He was 83 years old and had been engaged in the paper-making industry since coming here from England in 1870.

The device that is considered his most important invention, which is now manufactured by his sons in their factory here, is an automatic steam regulator. These he personally has installed in mills throughout this country, Canada and Europe.

Mr. Pickles was born in Gisbury, Yorkshire, England, and was employed at the Peter Adams Paper Company here for sixteen years. He became superintendent of a paper mill in Lafayette, Pa., but returned ten years later and with his brother, the late James Pickles, purchased the Adams mill.

Three sons, James T. and John F. of Manchester and William F., Jr., of Hartford, and a daughter, Mrs. Delbert Clark of Hamden, survive.

### Henning J. K. Arbo

VANCOUVER, B. C., October 27, 1934—Henning J. K. Arbo, chief chemist at the plant of the British Columbia Pulp and Paper Company, Woodfibre, B. C., died suddenly at his home there on October 17. He came to British Columbia in 1918 and was with the Woodfibre plant since that time. He took a very prominent part in the technical affairs of the industry and was widely known and respected on the Coast.

The son of Major Dr. Carl O. E. Arbor, of the Norwegian Army, Mr. Arbo was born in 1877 at Gulskogen, Norway, and arrived in Canada in 1898. He joined the Partington Pulp and Paper Company, at Fairville, N. B., and later was associated with the Fraser Pulp and Paper

Company at Edmundston, N. B. In 1918 he arrived in Burial Park, Vancouver.

In addition to his wife Mr. Arbo is survived by his two sons, Carl and Stanley, his six brothers and three sisters. His remains were interred in the Ocean View Burial Park, Vancouver.

### William B. Dodge

[FROM OUR REGULAR CORRESPONDENT]

DELPHI, Indiana, October 29, 1934—Word has been received here of the death of William B. Dodge, 70 yea s old, who with his father, the late Levi Dodge, owned and operated the Delphi Paper Mills for many years. He died at the home of a sister, Miss Alice Dodge, in Long Beach, Cal. After leaving Delphi, Mr. Dodge and his father engaged in the lumber business in Tennessee. The paper mill was sold before they left here. William B. Dodge later moved to California, but the father returned here and rebuilt the paper mill, which had been discontinued. Mr. William Dodge's wife, the former Mary Martin, died while they were living in Tennessee.

### Robert A. Gamble

WINDSOR, Conn., October 29, 1934—Robert A. Gamble, 62, of 74 Olga Avenue, who founded the Gamble Paper Company in Springfield, Mass., in 1910, died recently at his home. He was born in Iriquois, Ont., Canada, Aug. 17, 1872, and came to the United States in 1900. Having learned the trade of gage-maker in Canada, he engaged in the making of tools for the manufacture of firearms in Springfield and was employed by the Smith & Wesson Company of that city for fifteen years. Before the war he came to Hartford and entered the employ of the Colt Patent Firearms Manufacturing Company where he supervised the manufacture of rifling and chambering tools for machine guns. During the war he was associated with the inventor, John M. Browning, in the modification and development of the Browning machine gun at the Colt plant. He leaves his wife and a son, Lloyd F. Gamble, of Windsor.

### George McClellan Stearns

LAKE MEGANTIC, Que., October 29, 1934—Lake Megantic lost one of its prominent citizens on October 12 in the sudden death of George McClellan Stearns, D.C.L., president of the Lake Megantic Pulp Company. Apparently in his usual health, Mr. Stearns had returned the previous evening from attending a meeting in Lennoxville of the executive committee of the University of Bishop's College. The following morning he was stricken, and despite medical attention passed away within a short time.

Prominently connected with the lumber trade of the province, Mr. Stearns had been a resident of Lake Megantic for the past forty years. Besides his business activities, the deceased was closely identified with Church of England affairs, being a member of the Church Society of the Diocese of Quebec. He was a member of the executive committees of both Bishop's University, Lennoxville, and King's Hall, Compton, and took a keen interest in matters pertaining to these two institutions.

Predeceased by his wife three years ago, Mr. Stearns leaves to mourn his loss one son, George McClellan "Mac" Stearns, Jr., of Lake Megantic, and three daughters, the Misses Dorothy M. Stearns and Ruth Lyford Stearns, both of this place, and Mrs. Katherine Beaumont, of Montreal.

### Mrs. R. M. Myers

ROCHESTER, N. Y., October 23, 1934—Mrs. R. M. Myers, the widow of the founder of R. M. Myers & Co., Inc., paper merchants of this city passed on at her home at 12 East Boulevard on Tuesday, October 16. Mrs. Myers was 76 years of age.

Mrs. Myers is survived by her son R. Evershed Myers, the present head of R. M. Myers & Co., Inc., her daughter, Mrs. Howard T. Cumming, and six grandchildren.

Mrs. Myers was the daughter of the eminent civil engineer Thomas F. Evershed, the originator of the Niagara Falls Power Tunnel. In 1887 she married the late Robert M. Myers.

Mrs. Myers was a woman of wide interests. For over thirty years she was an active member of the board of managers of the Episcopal Church Home of Rochester. She was also a member of the Daughters of the American Revolution.

### Edward W. Tuck

BOSTON, Mass., October 29, 1934—Edward W. Tuck, 85, who was in the paper business in East Boston for forty years, died Friday at the Quincy Hospital, Quincy, Mass. He is survived by his brother, William F. Tuck, of Wollaston, Mass., who is 87 years old.

## Association Issues New Monthly Review

The American Paper and Pulp Association has just issued a new serial publication entitled "Monthly Review," in order to keep the paper and pulp industry more closely informed as to its activities in administering the General Code and to serve as a record of the accomplishments of the industry achieved through organization under the National Industrial Recovery Act.

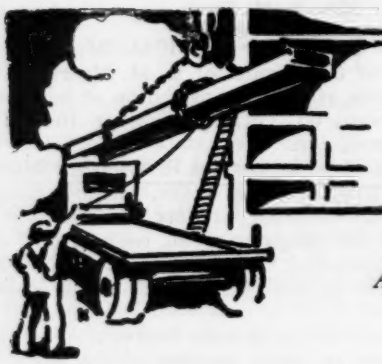
This publication will deal with the industry's activities in respect to code compliance, costs, grading, the work of the coordinator and of the Import Committee, legal interpretations, the financing of the Paper Industry Authority and matters relating to code administration by divisional authorities.

The association will also issue another serial publication which will be devoted to a presentation of factual data reported to and developed by the Paper Industry Authority. It will cover production, shipments, orders, stocks, consumption, operating ratios, labor statistics, price trends, exports and imports of paper and pulp and other pertinent data.

The P. I. A. Bulletin will be continued as a resume of official action by the Paper Industry Authority and of National Recovery Administration regulations and interpretations generally affecting the industry.

In addition to these new publications, a review of the first eight months of operation under the General Code is being prepared. This review will not only summarize the facts that are measurable, such as the trends of prices, payrolls, employment and production, and an analysis of the financial condition of the industry, since the effective date of the General Code, but it will trace the trends prior to that date, as far back as 1926 in most instances. The data will in most cases be based upon reports that have been made to the NRA.

All publications will be dated and numbered consecutively and will be punched for filing. They will comprise a unique and complete record of the industry's efforts to achieve economic self-regulation under the National Industrial Recovery Act.



# CONSTRUCTION NEWS

*A Summary of Vital Facts Regarding Construction, Finances and Operation of Paper Mills*

**Construction News**

**Chicago, Ill.**—The Dearborn Paper Company, 860 Rees street, has awarded general contract to Charles A. Erlandson, 7717 South Ada street, Chicago, for new paper converting, storage and distributing plant at 21st and Loomis streets, recently referred to in these columns. It will be one and two-story, 130 x 460 feet, reported to cost close to $80,000, with equipment. Superstructure will be placed under way at early date. J. M. LaPoint is company engineer.

**St. Louis, Mo.**—Johnston Tin Foil & Metal Company, 6108 South Broadway, manufacturer of sheet foils and allied metallic sheet products, has approved plans for new addition to plant, to be one-story, estimated to cost close to $25,000, with equipment. General contract has been awarded to Joseph E. Stauder, 5405 South Broadway, and superstructure will soon begin. O'Meara & Hills, 5709 Waterman street, are architects.

**Hickory, N. C.**—The Hickory Paper Box Company, recently organized with capital of $100,000, plans operation of local plant for manufacture of paper boxes and containers. New company is headed by R. E. Ballenger and A. S. Menzies, both of Hickory.

**Oshkosh, Wis.**—The Oshkosh Corrugated Box Manufacturing Company, Harrison and Murdock streets, is completing construction of new one-story addition to plant, previously referred to in these columns, and expects to have unit ready for service at early date. A number of sub-contracts are being let for finishing work, including plumbing, sheet metal work, etc. Fluor Brothers & Smith, 48 Otter street, Oshkosh, are general contractors. New addition is reported to cost over $25,000, with equipment.

**Chicago, Ill.**—The Karolton Envelope Company, 2626 Washington boulevard, lately chartered with capital of 250 shares of stock, no par value, plans operation of local paper converting plant for manufacture of envelopes and kindred specialties. Incorporators of new company include Carlton W. and Albert E. Smith.

**Detroit, Mich.**—National Automotive Fibres, Inc., General Motors Building, manufacturer of fibre products for automobile and allied service, has awarded general contract to the O. W. Burke Company, Detroit, for new addition to plant at 19925 Hoover avenue, to be two-story, 80 x 160 feet, designed primarily for storage and distributing service. Superstructure will be placed under way at early date. Structure will cost close to $50,000, including equipment.

**Chicago, Ill.**—Plotkin & Smith, Inc., paper goods, have plans for new two-story paper-baling, storage and distributing building at 1101-3 South Fairfield avenue, 50 x 95 feet, estimated to cost about $30,000, with equipment. General contract has been awarded to Krugly & Troschinsky, Chicago. Edward P. Steinberg, 205 West Wacker drive, is architect, in charge.

**Minneapolis, Minn.**—Northwest Research Institute, University of Minnesota, is considering early construction of new processing plant for production of alpha cellulose, used in manufacture of cellophane, rayon, etc., employing aspen timber for raw pulp wood supply. Experiments carried out for a number of months indicate feasibility of utilizing the character of wood noted, making possible large supply from the aspen trees which abound in forest districts in Northern part of Minnesota. Proposed plant will be of commercial character, equipped for initial output of about 500 pounds of finished material per day.

**Portland, Me.**—Brown Company, Commercial street, operating pulp and paper mills in New Hampshire, has arranged financing in amount of $900,000 for working capital and plant operations.

**Buffalo, N. Y.**—Armstrong Cork and Insulation Company, Lancaster, Pa., manufacturer of flooring, insulation products, etc., has arranged for long-term lease of two-story building at 329-31 Ellicott street, Buffalo, and will occupy for new factory branch, storage and distributing plant. All local divisions, heretofore at 110 Washington street and 17 Court street, will be consolidated at new location.

**Chicago, Ill.**—American Tag Company, 6153 South State street, manufacturer of tags, labels and kindred paper products, has filed plans for new addition to plant, to be one-story, about 20 x 38 ft. General contract has been awarded to A. T. Herlin & Son, 6816 Clyde avenue, who will begin work at once. J. J. Meldahl is company architect, address noted.

**Indianapolis, Ind.**—The Indianapolis Blue Print and Lithograph Company, Century Building, recently organized, has taken over and will consolidate the Indianapolis Blue Print & Manufacturing Company, 151 East Maryland street; Indianapolis Lithograph Company and National Paper Tracing Company, both with local plants. New organization will occupy several floors in Century Building, noted, and will specialize in manufacture of blue print paper stock and other special paper goods for engineering and mechanical service. S. H. Clendenin is president of consolidated company.

**Vancouver, B. C.**—R. O. Sweazy, Montreal, Que., is at head of project to construct and operate a sulphite pulp mill in vicinity of Vancouver, where site will soon be selected. Plant will consists of several units, with power house, machine shop and other mechanical departments, and is reported to cost over $300,000, with machinery. It is proposed to begin work early in the coming year.

**Manchester, England**—Courtlaulds, Ltd., Manchester, manufacturer of rayon products, viscose paper specialties, etc., is concluding arrangements with La Cellophane of

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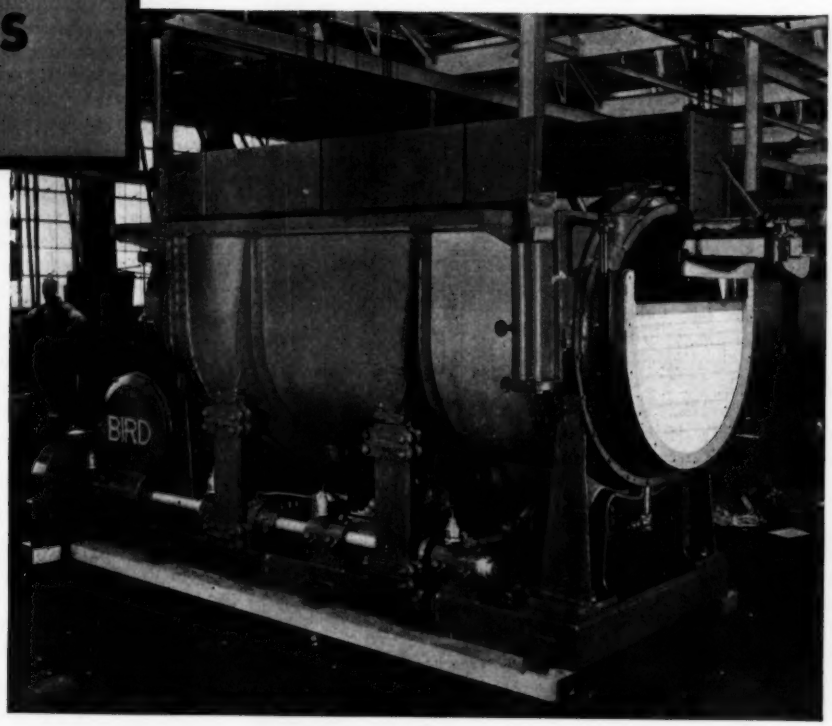


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**Let us check over your screens and screening requirements with you. We believe we may be able to show you real improvements, important savings. At any rate, it's worth finding out, isn't it?**

# BIRD MACHINE COMPANY

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6182

France, Ltd., Paris, France, for construction of new plant in England, likely in vicinity of Manchester, for manufacture of transparent paper products. New plant will consist of group of one and multi-story buildings, and is reported to cost over $600,000, with equipment. Courtaulds, Ltd., will be active in project, closely identified with operations at new mill.

### New Companies

**Brooklyn, N. Y.**—The Denco Paper Products Corporation has been incorporated with capital of $20,000, to manufacture and deal in paper goods of various kinds. New company is represented by Abraham Lebenkoff, 1440 Broadway, New York, attorney.

**Chicago, Ill.**—The American Wall Paper Company, 7657 South Halsted street, has been chartered with capital of 100 shares of stock, no par value, to manufacture and deal in wall paper products. The incorporators are Terrence McCabe and Jack Pass.

**Wilmington, Del.**—The Safbilt Fibre Products Corporation has been incorporated with capital of 2000 shares of stock, no par value, under direction of the Colonial Charter Company, Ford Building, Wilmington, to manufacture and deal in fibre products.

**New York, N. Y.**—The Bronx Paper Corporation has been incorporated with capital of $20,000, to deal in paper products of various kinds. New company is represented by Hyman H. Hammer, 5 Beekman street, attorney.

**Houston, Tex.**—Fibre Warehouses, Inc., has been organized to deal in, warehouse and distribute fibre products of different kinds. New company is headed by C. A. Riesel and H. F. Mengden, 1009 Missouri street, Houston.

## Electronic Relay Facilitates Telemetering

An electronic relay, by transforming minute electrical currents into useful forces, plays an important part in a new telemetering system recently developed by Bailey Meter Company, Cleveland, Ohio, for measuring pressure, temperature, liquid level, and other factors at distant locations.

The electronic relay operated Galvatron receiving element is mounted in a neat appearing moisture-proof pressed steel casing and records as many as four factors on one 12-inch diameter circular chart of the type shown in Fig. 1. The transmitting element consists principally of a variable resistance unit which is operated by the metering device. In the case of a float operated transmitter for liquid level, a float, by means of a perforated metal tape, operates a sprocket which moves the rheostat. When necessary, an electric bulb is provided to prevent frost from forming on the resistance unit. This type of transmitting element is illustrated in Fig. 2.

For distances up to ten miles, accuracy to within 1% scale reading can be obtained by using a three wire connection between the metering device and the remote recording apparatus with telephone lines or their equivalent as the transmitting medium. Fig. 3 illustrates a diagram of the three wire connection. A variable resistance T is adjusted with the flow or other factor. Resistance P of the receiving element automatically balances T so that a pen geared to P indicates the position of the metering device driving variable resistance T.

For distances less than three miles, the two wire connection may be used. In this case, the galvanometer is connected to the bridge at A1 (shown in Fig. 3). With this method, accuracy to within 1 per cent maximum scale reading can be obtained.

Only a small amount of current is required for this system because a vacuum tube system amplifies the transmitted power a sufficient degree to assure positive operation of the equipment. In view of this low current, dry cells, used to produce the necessary direct current supply, should last from six months to one year.

Since both current and voltage are so small and since the current is direct, there is no danger of interference between adjacent telephone lines and the recording circuit. Threfore, all special filters and insulating transformer equipment ordinarily required with certain types of transmitting systems, can be eliminated.

When it is desired to transmit indications for more than three miles and where only two wires may be used, a potentiometer circuit is recommended. An important advantage of this system is that additional records up to 4 can be obtained with the addition of only 1 wire per record. Thus two records will require three transmission wires.

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Work has started on a two-story paper baling plant at 1101-03 South Fairfield Avenue, Chicago, to be occupied by Plotkin & Smith. The building is to be 95x50 in size, of slow burning construction and sprinklered. The cost is reported at approximately $26,000.

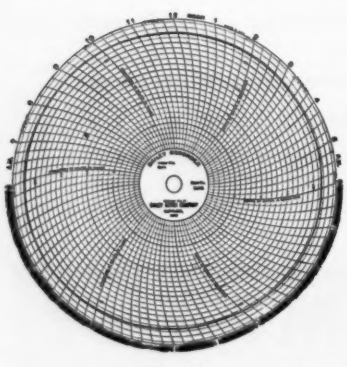

FIG. 1

Chart made by Bailey galvatron, recording water level in a distant reservoir.

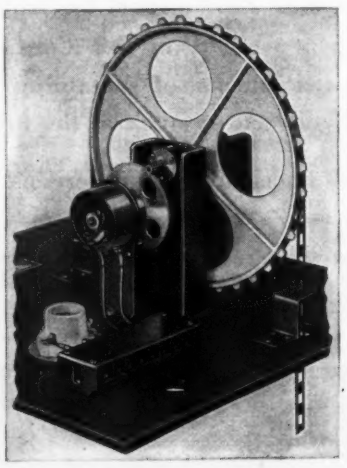

FIG. 2

Float operated transmitting element for liquid level.

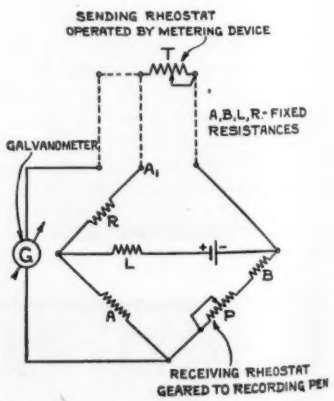


FIG. 3

Wiring diagram of Bailey telemetering system.

## Position of Paper Makers Union

Matthew J. Burns has sent the following letter to the officers and members of the International Brotherhood of Paper Makers:

"During the past six weeks many statements have appeared in the public press of both United States and Canada in regard to the position of the Paper Makers' Union on the question of Canadian manufactured newsprint paper being marketed in the United States free of duty.

"Our Canadian members and Union shop companies in Canada have become very much confused as to what our position is.

"I want to make our position entirely clear. Our present position is based on our Montreal Resolution adopted last March (1934). The purpose of this resolution is to discriminate against such newsprint paper manufactured in Canada and entering the United States on an unfair basis. Our Union is committed by the resolution to bring these newsprint companies in Canada, marketing their paper in the United States, into line with NRA Newsprint Code requirements and if this is not accomplished within a reasonable length of time then we are further committed to institute political and other lawful activities to prevent the importation of newsprint paper manufactured under wages and conditions which are not equal to the minimum rates of pay and the maximum hours of labor as prescribed by the newsprint Code for the United States.

"We are still bound by that resolution.

"We take it for granted that it is also the desire of our Union shop Canadian newsprint companies, which are selling on the United States market against the unfair competition originating in Canada, to eliminate or correct unfair competition.

"There is now a great concern being shown by many interests in the United States over the weakness of the Government's policy in permitting these four Quebec companies to continue to demoralize the whole newsprint industry and make the Recovery Act, as far as the newsprint industry is concerned, a farce and to victimize all those who tried to carry out the purpose of the Act.

"Our Union's position on this question of Canadian newsprint paper entering into the United States market is as follows:

"We do not want a tariff. A tariff will not meet the requirements of the situation.

"We are asking for an embargo on all newsprint paper entering the United States, which is not manufactured under the requirement of the Newsprint Code.

"We do not complain of the ingenuity the Canadian people engaged in the paper industry may possess.

"We do not complain because of the great natural resources which Canada may possess for the manufacture of newsprint paper.

"We do not complain of any superiority of workmanship which the people engaged in the paper industry in Canada may possess.

"But, we do say that Canada is not entitled to any unfair advantages in the use of our newsprint market while this product is coming into the United States free of duty.

"We do not propose to stand idly by and permit the newspaper publishers of the United States to use the National Industrial Recovery Act for a perverse purpose and to complete the destruction of the newsprint industry in the United States.

"We are going to insist that unfair products be embargoed and that the United States Government carry out the purpose of the National Industrial Recovery Act, which is to rehabilitate industry and commerce in the United States and to shorten hours and increase wages for the purpose of increasing purchasing power and fulfill the promises made by the Act. If this cannot be done, then the Government should so state and not victimize those in the newsprint industry who are trying to be fair and have complied with the request of the Government that we shorten hours and increase wages.

"The American Federation of Labor at its recent Convention took under advisement our Montreal Resolution as above referred to.

"Attached hereto is an exchange of correspondence between the writer and the Hearst publications in respect to the general policy pursued by the American newspaper publishers in placing orders, giving preference to the low wage newsprint companies operating in the Province of Quebec, which seems to be on the face of it a deliberate disregard of the purpose of the National Industrial Recovery Act. The Hearst publications give some very illuminating information.

"I ask that all interested parties study these documents over very carefully as it seems to me that the fault is not altogether with the publishers. Surely the newsprint manufacturers in making contracts for the sale of their output have something to say as to whether the price should be $40 per ton or $45 or $50, as the case may be."

## Recommends Wage Increase

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., October 31, 1934—A conference was held here on Monday by representatives of the paper industry with Lieutenant Tulley, NRA Deputy Administrator, in connection with his proposed recommendation that the general wage rate for males in the northern zone be increased from 38 cents to 42 cents per hour and that other rates be raised accordingly.

The following members of the special labor committee of the American Paper and Pulp Association attended the conference:—

A. C. Goodyear, Bogalusa Paper Company, 570 Lexington avenue, New York, N. Y.; P. H. Rogers, Carolina Fibre Company, Hartsville, S. C.; Z. W. Ranck, Crystal Tissue Company, Middletown, Ohio.; T. E. Knowlton, Knowlton Brothers, Watertown, N. Y.; Adam Wilkinson, American Writing Paper Company, Inc., Holyoke, Mass.; E. A. Charlton, International Paper Company, New York, N. Y.; R. W. Hovey, Oxford Paper Company, 230 Park avenue, New York, N. Y.; W. E. McIntyre, McIntyre Paper Company, Inc., Fayetteville, N. Y.

Others at the conference included, Charles W. Boyce, secretary of the American Paper and Pulp Association; R. K. Lellogg, Newsprint Service Bureau; Carl E. Whitney, Wise, Whitney & Parker and J. A. Kavanaugh.

## Deputy Administrator Tulley Leaves NRA

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., October 31, 1934.—NRA Deputy Administrator C. H. Tulley, who has been in charge of the Paper Division since the resignation of W. W. Pickard early in June, is leaving NRA to return to the army as assistant United States engineer for the Louisville (Ky.) district. Mr. Tulley will leave his present position on November 5. He has been connected with the Paper Division since July 19, 1933. Assistant Deputy F. C. Lowthorp will be acting chief of the Paper Division until selection is made by the National Recovery Board.

PAPER TRADE JOURNAL
ESTABLISHED 1872

15 West 47th St., New York, N. Y.

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Price, Per Copy, 10 Cents

United States, Per Annum, $4.00

Canada, including tax, $7.50; Foreign Countries in Postal Union, $6.00

Member Audit Bureau of Circulations

Vol. XCIX New York, November 1, 1934 No. 18

*This publication is now and always has been printed on paper made in the U. S. A.*

## TAPPI YEAR BOOK

The 1934 issue of the TAPPI Year Book and Roster which has recently been issued reflects an organization that is "alive and going places." The current issue which is the third published by the Technical Association of the Pulp and Paper Industry, is about 20 pages larger than the previous issue in spite of the fact that much of the material has been condensed and other material is printed in smaller type than hitherto.

Conforming to a policy of changing the color of cover stock each year for the convenience of users, the present issue is green, a contrast to the blue of last year and the buff of 1932.

The programs of the local sections are given a prominent place and over a period of time this feature will present the history of these important cogs in the organization. The local sections have done much to broaden the interest of the industry in the association since they enable a large portion of the membership to get togther at times between the annual and fall meetings of the association.

In the part of the Year Book devoted to committee organization two new items are to be noted, namely, the TAPPI Council and the Planning Committee. The former is an organization of division and committee chairmen and vice chairmen, executive committeemen, section officers and past officers of the Association. This body usually meets immediately prior to the national meetings to discuss the welfare of the organization. The Planning Committee is composed of the officers and divisional chairmen who meet about four months prior to national meetings to arrange the meeting programs and general work of the divisions.

A perusal of the list of Special Reports on Manufacturing Problems shows that the number of major problems handled by the Association has reached 234. These problems which are real ones for paper mills cover a wide range of subjects including such subjects as "Paper Coating Manufacturing Problems," "Trade-Union and Employer-Employee Relations," "Washing Felts on Paper Machines," "Siphons vs. Buckets for Water Removal from Drier Rolls," etc.

The committee rosters indicate that the association is attracting more and more of the active leaders of the industry to participate in its program. These committees constitute the Who's Who in the pulp and paper manufacture and are the principal reason for the great and growing prestige of TAPPI.

The membership list is somewhat larger than it was last year and it is interesting to note the large number of practical operating superintendents who have joined the Association during the past year. This is a clear indication we believe, of the present day trend in the industry toward improved operating practices and engineering. As in the case of the chemical industries, we are sure that the near future of the industry will present a drama of advance.

It has been stated in the August issue of *The Sphere* "that in determining whether an industry is efficient, it should be asked as to what proportion of profits, before dividends, is annually put aside for research, for the quest of new products and the more efficient production of old products. Of almost greater significance is research in the development of new uses and markets for both new and old products."

The growth of TAPPI, the PAPER TRADE JOURNAL feels, reflects this new, healthy attitude among the operating men of the paper industry.

## LITHOGRAPHIC PAPER STUDIES RESUMED AT BUREAU OF STANDARDS

Research on lithographic papers, carried on jointly by the National Bureau of Standards and The Lithographic Technical Foundation for a number of years until July, 1933, when it was discontinued because of lack of funds, has been resumed at the Bureau. The work is resumed under the research associateship plan. N. N. V. Geib, formerly a Bureau of Standards engineer, has been employed as research associate for the foundation, the arrangement being made possible by the establishment of a salary fund to which several prominent paper manufacturers have contributed.

Prior to the discontinuance of the work over a year ago, considerable information of mutual interest to paper manufacturers, and offset printers had been obtained. Facts about the causes of misregister in multicolor offset printing, obtained by practical printing tests carried out in the air conditioned plant of the American Lithograph Company in 1931, were published in the article "Register Studies in Offset Lithography," Bureau of Standards Research Paper No. 480. Results of further studies on the sensitivity of offset papers to atmospheric conditions were

published in an article entitled "Reactions of Lithographic Papers to Variations in Humidity and Temperature," Research Paper No. 633.

The program for the current year includes additional studies of the relation of fiber properties, and sheet formation to paper distortion in offset printing; the influence of conditioning factors to behavior in printing; and studies of large scale paper conditioning, to find the most efficient practice for the printing plant. Practical printing experiments are being made in the air conditioned plant of the Coast and Geodetic Survey with the active cooperation of D. P. Barnette, Chief of the Printing Division, and his associates.

The work is carried on with the advice and active cooperation of an advisory committee from the Lithographic Technical Foundation under the chairmanship of R. F. Reed, director of the Department of Lithographic Research, University of Cincinnati. Funds already appropriated by paper manufacturers are sufficient to assure the continuance of this work for the current fiscal year.

## Kraft Paper Div. Submits Budget

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., October 29, 1934—The Executive Authority for the Kraft Paper Division of the Paper and Pulp Industry has made application to the National Industrial Recovery Board for approval of its budget for, and of the basis of contribution by members of the said Division of said Industry to, the expense of administering the Code for the period from December 1, 1933 to November 30, 1934.

The total amount of said budget for the said period is $72,000. The basis of contribution shall be as follows:

The basis for assessment shall be at the rate of $0.09 per ton of Kraft Paper shipped.

The budget is as follows:

| | Actual Expenditures for Elapsed Period | Estimated Expenditures for Remainder of Period |
|---|---|---|
| Management Fee Covering: Staff Salaries, Office and Equipment Rental, Telephone Service and Light | $22,500.00 | $19,500.00 |
| Telephone Tolls and Telegrams | 2,220.85 | 3,779.15 |
| Postage | 796.79 | 1,203.21 |
| Stationery, Forms and Supplies | 1,449.61 | 2,550.39 |
| Traveling: | | |
| Staff | 3,587.43 | 4,412.57 |
| Code Authority | 1,289.74 | 3,710.26 |
| Miscellaneous | .72 | 4,999.28 |
| Total Division Direct Expenses | $31,845.14 | $40,154.86 |

Criticisms, objections or suggestions concerning a $72,000 budget for the Kraft paper division of the paper and pulp industry must be submitted to Deputy Administrator David H. Tulley, Room 209, National Savings and Trust Building, Washington, before November 8, 1934, the National Industrial Recovery Board announces.

Basis for assessment shall be at the rate of $.09 per ton of Kraft paper shipped. The period covered in the budget is from December 1, 1933, to November 30, 1934.

## Installing Water Filtration System

WATERFORD, N. Y., October 27, 1934—Hungerford & Terry, Inc., of Clayton, N. J., are installing a 1,000,000 gallon per day gravity type water filtration system in the plant here of the Mohawk Paper Mills, Inc. This water filtration system will be of the most modern type and will operate on Mohawk River water. The installation will be completed and the plant in operation in about one month.

## Weekly Production Ratio Report

Reports to the Paper Industry Authority show the following Over-All Industry Production Ratios for designated weeks.

| | Reporting Mills | | Total Production Ratio |
|---|---|---|---|
| | Number | Capacity | |
| *Week ending September 1, 1934 | 269 | 107,121 | 75.7% |
| *Week ending September 8, 1934 | 291 | 107,676 | 52.5% |
| *Week ending September 15, 1934 | 287 | 112,372 | 58.3% |
| *Week ending September 22, 1934 | 291 | 119,926 | 60.8% |
| *Week ending September 29, 1934 | 296 | 125,937 | 64.3% |
| *Week ending October 6, 1934 | 296 | 120,501 | 65.0% |
| *Week ending October 13, 1934 | 283 | 113,082 | 66.4% |
| *Week ending October 20, 1934 | 268 | 103,837 | 65.4% |

The weekly paper capacity (based on 6 days of 24 hours each) for all mills operating wholly or partially under the General Code for the Paper and Pulp Industry is approximately 175,000 tons. This figure has been tabulated from mill questionnaires and in certain instances from daily capacities given in Lockwood's Directory of the Paper and Allied Trades.

Detailed statistics showing the number of mills reporting by ratio groups are given below:

| | Number of Mills Reporting* Week ending | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Ratio Limits | Sept. 1 1934 | Sept. 8 1934 | Sept. 15 1934 | Sept. 22 1934 | Sept. 29 1934 | Oct. 6 1934 | Oct. 13 1934 | Oct. 20 1934 |
| 0% to 50% | 117 | 147 | 128 | 112 | 103 | 111 | 104 | 102 |
| 51% to 100% | 152 | 144 | 159 | 179 | 193 | 185 | 179 | 166 |

* Subject to revision.

According to reports from the National Paperboard Association, per cents of operation, based on "Inch-Hours," were as follows:

| | |
|---|---|
| Week ending September 8 | 53 per cent |
| Week ending September 15 | 67 per cent |
| Week ending September 22 | 62 per cent |
| Week ending September 29 | 64 per cent |
| Week ending October 6 | 64 per cent |
| Week ending October 13 | 64 per cent |
| Week ending October 20 | 64 per cent |

Revised statistics covering delinquent mill returns will be shown in later reports.

## Paper Board Men to Meet in New York

The National Paperboard Association will hold its annual meeting at the Waldorf-Astoria Hotel, New York, Thursday, November 15. This meeting is called for the election of officers for the ensuing year and for taking such other action as is specified in the By-laws of the association.

Important subjects are to be considered at this meeting, including a program of association activities for the coming year, and it is important that all members attend and participate actively.

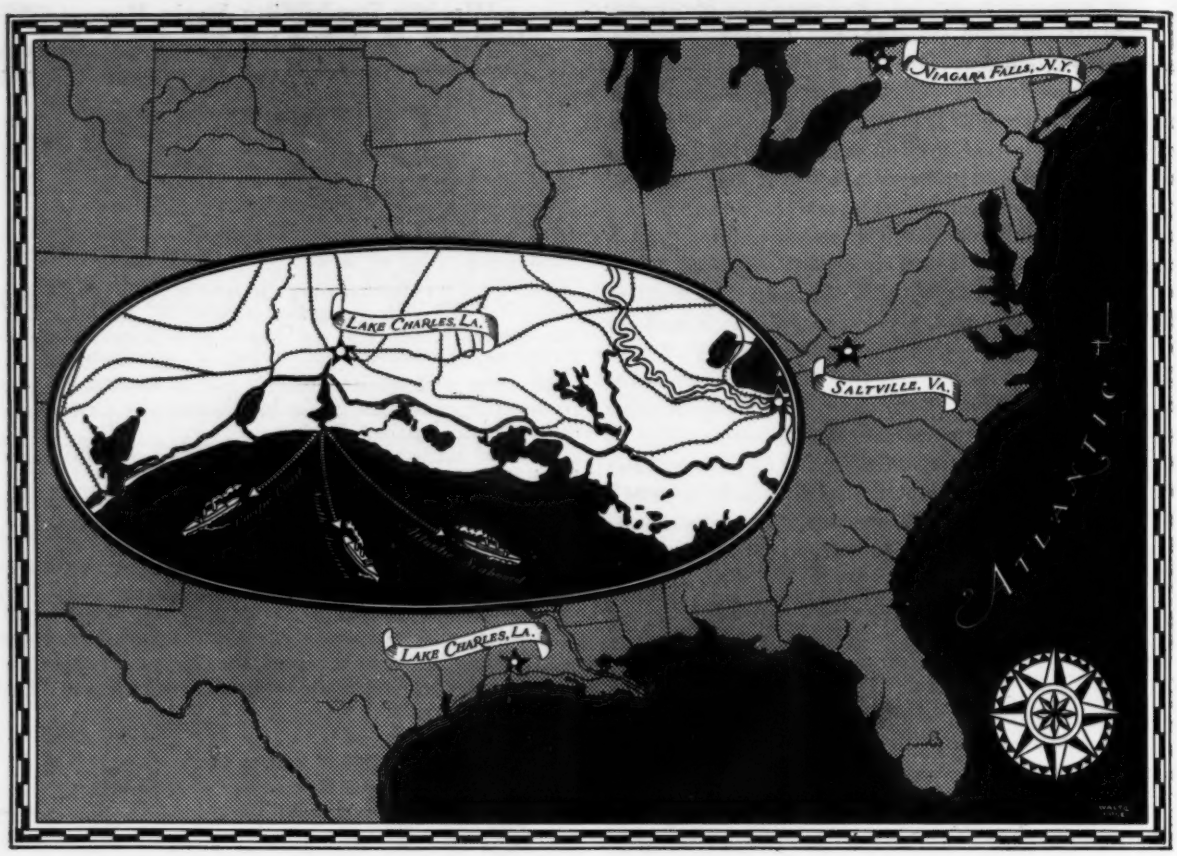
## Reiser Co. Buys Shamokin Mill

The Reiser Company, with offices at 119 West 40 street, New York, has purchased the Cellulose Products Company whose plant is located at Shamokin, Pa. Kurt Wandel as consulting engineer has been connected with the revamping of this plant and the installation of new machinery. The Gibbs-Brower Company, 401 Broadway, New York, was the broker in the transaction.

## Cayuga Purchases Yarn Plant

[FROM OUR REGULAR CORRESPONDENT]

AUBURN, N. Y., October 22, 1934—The Cayuga Linen and Cotton Mills, Inc., have purchased a yarn mill in North Carolina to provide yarns for their polished twine. The mills hope to have a line of wrapping twine before long to offer the trade.




# MATHIESON IS READY!

**In December of this year, well ahead of schedule, the new Mathieson plant at Lake Charles, Louisiana, will begin operations.**

**The Lake Charles Plant will serve consumers of alkali over a wide area in the South and Southwest; it will also permit the economical shipment of alkali by water to points on the Atlantic and Pacific seaboards, along the Gulf Coast and on inland waterways as well as the Mississippi River and its tributaries. By bringing the consumer and his source of supply closer together—closer, that is, from the standpoint of transportation costs—the Lake Charles Plant will render a definite service to the consuming industries. For with raw material purchases the important consideration to the buyer is the cost *laid down* at his plant.**

**Out of Lake Charles, rail shipments will move over three great railroad systems—the Southern Pacific, Kansas City Southern or Missouri Pacific, and their connections. At our plant docks, water shipments will be loaded on steamers serving the ports on the Atlantic and Pacific coasts. Barges will make their way to points along the Intracoastal Waterway (canal), and throughout the Mississippi River basin.**

**For nearly forty years the Mathieson plant at Saltville, Virginia, the only source of supply of alkali in the South, has saved Southern consumers thousands of dollars in transportation charges each year. Now the Mathieson plant at Lake Charles is ready to extend similar benefits to an important growing industrial area in the Southwest.**

**With plants at Niagara Falls, Saltville and Lake Charles, Mathieson is able to offer a well-rounded service in all the principal industrial regions of the United States.**

*Mathieson Chemicals*

© THE MATHIESON ALKALI WORKS (INC.) . . . 250 PARK AVENUE, NEW YORK, N. Y.

Section of the
Technical Association of the Pulp and Paper Industry
Edited by Ronald G. Macdonald, Secretary

# Horizontal Porosity With The Bekk Smoothness Tester As It Affects Smoothness

By Julius Bekk[1]

In smoothness measuring with the Bekk apparatus, one must accept as fact that, according to Fig. 1, an air current (A), whose volume illustrates a definite standard of smoothness, flows between the paper surface to be tested and the optically flat glass sockle (or test block).

A contention has been made that in addition to this, an air current (B) flows through the paper in a horizontal direction, thereby causing a falsification of the measuring result. In order to verify or disprove this contention, we calculated mathematically the porosity resistance of the paper in its horizontal direction, which we designated "horizontal porosity." The accuracy of the computation was further proved by practical experiments under special measuring arrangements.

### Mathematical Determination of Horizontal Porosity

The following deductions indicate that the porosity resistance within the paper is alike in all directions, which contention can be proved without any further experimentation; and that, furthermore, the porosity resistances of papers placed one on top of another, may be added together. One can readily determine this by making the following experiment: If one places in the usual fashion on the testing block a number of papers whose porosity has been predetermined and tests the porosity time of the combined mass, this yields the sum of all the individual papers.

*Designation*

d (mm) —The paper thickness or density.
f (mm²)—Required surface for the air passage.
p (sec) —Porosity count measured in usual fashion.
K —A constant factor.
P (sec) —The undetermined porosity count for the horizontal direction.
g (sec) —The measured "apparent" smoothness.
G (sec) —The undetermined actual smoothness.

Consequently you have the following equation for the measured porosity count:

$$p = K \cdot \frac{d}{f} \tag{1}$$

(Therefore p is proportional to d and to $\frac{1}{f}$ ∴ $p \propto \frac{d}{f}$ or $p = K\frac{d}{f}$)

*Note:* This article originally submitted in German was translated in New York and the translator took the liberty of extending, for simplification purposes only, some of the formulae. Such continuations are precluded by the word "therefore" in every case.

[1] Technical Director of the Laboratory, Ullstein Works, Berlin-Tempelhof, Germany, in collaboration with the Scientific Bureau of R. Fuess, Berlin-Steglitz, Germany.

Now, in order to compute the porosity resistance in the horizontal direction for a selected paper, whose measured normal cross porosity is p, let us imagine a paper leaf according to Fig. 2, wherein are an infinite quantity of circular rings of extremely small thickness. The surface of each individual cross ring intended for the flow of air current is consequently:

$$f = 2\pi r d \tag{2}$$

The total resistance of the mass follows according to equation (1)

$$P = K \int \frac{dr}{f}; \text{ and with (2):} \tag{3}$$

(in which, $f = 2\pi r \cdot d$)

$$\text{therefore } P = \frac{K}{2\pi d} \cdot \int_{r_1}^{R} \frac{dr}{r}$$

$$P = \frac{K}{2\pi d} \cdot \ln \frac{R}{r_1} \tag{4}$$

$$\left(\text{Therefore; } = \frac{K}{2\pi d} \ln \frac{R}{r_1}\right)$$

The constant K is given from equation (1) to

$$K = p \frac{f}{d}, \text{ wherewith} \tag{5}$$

$$P = \frac{p f}{2\pi d^2} \cdot \ln \frac{R}{r_1} \tag{6}$$

In the customary porosity measuring, the surface f is to be set up with 100 mm². Inasmuch as the porosity measuring is determined with 100 cm³, and the smoothness measuring with 10 cm³ only, the fraction is consequently multiplied by 0.1. Finally one sets $r_1 = 5.6$ mm. and $R = 18.7$ mm. to arrive at the horizontal porosity,

Therefore, substituting numerical values in (6)

$$P = \left(\frac{p}{10}\right)\left(\frac{100}{2\pi d^2}\right) \cdot \ln \frac{18.7}{5.6}$$

$$\text{Therefore} = \left[\frac{100}{10.2\pi} \ln \left(\frac{18.7}{5.6}\right)\right] \frac{p}{d^2}$$

$$P = 1.92 \frac{p}{d^2} \text{ sec.} \tag{7}$$

(Note: P must be divided by 10 to get the corrected or equivalent value for a 10 cm.³ air flow. f in the Bekk instrument is 100 mm.² for a porosity measurement.)

After the smoothness of the paper is measured in the customary fashion to g (sec), one does not place this

value opposite to the actual smoothness resistance; what actually follows is a combined resistance which results from the parallel efficiency of smoothness and horizontal porosity resistance. As the measured times of the resistances are directly proportional, the well-known formula indicated below applies:

$$\frac{1}{g} = \frac{1}{P} + \frac{1}{G} \text{ or} \tag{8}$$

$$G = \frac{P \cdot g}{P - g} = \left(\frac{P}{P - g}\right) g \tag{9}$$

In order to obtain the actual smoothness, by eliminating the horizontal porosity, the measured smoothness must be multiplied with the factor:

(Therefore, corrected smoothness (G) = apparent smoothness (g) $\times \left(\frac{P}{P-g}\right)$),

$$M = \frac{P}{P - g}, \tag{10}$$

$$\left(\text{or, } G = g\left(\frac{P}{P-g}\right)\right),$$

in which the value P for the horizontal porosity is to be calculated according to equation (7).

One might contend perhaps that the actual flow ratios of the paper have not been thoroughly established for the reason that a reciprocal interchange of both air flows A and B (Fig. 1) might occur on their way from the periphery to the central point. *But that this is not the case and that these two flows do not affect each other mutually is evident from the following:*

The central point of the paper is affected by the compression of the vacuum container, the periphery by the pressure of the free outer air. The diminution of pressure from the paper edge to the center naturally indicates that the same law applies to both air flows (currents); between any two points in the paper which are equidistant from its center, there cannot possibly exist either air interchange or pressure difference.

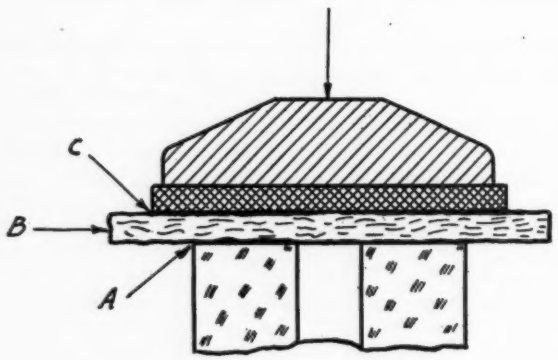



FIG. 1

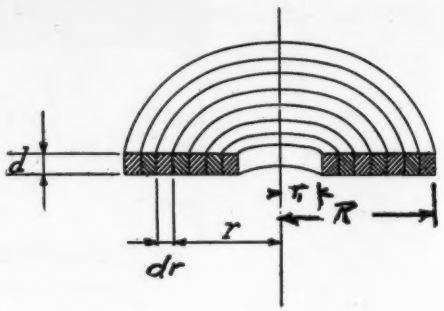



FIG. 2

**Experimental Determination of Horizontal Porosity**

For testing purposes we employed afterwards 4 paper types 1-4, whose thicknesses, measured porosity, and smoothness, are given in Table I. The table contains, furthermore, also the horizontal porosity calculated according to formula (7) as well as the multiplier calculated according to formula (10).

Finally the table contains empirically obtained horizontal porosities which were obtained by means of the three following experiments:

(1) The test paper was inserted between a rubber plate and a rubber ring. Both rubber plate and rubber ring were of soft Para rubber. The outer and inner diameters of the rubber ring correspond to the Sockle of the smoothness tester. The lower surface of the rubber ring was placed in an air-tight manner on the Sockle. The obtained values were somewhat higher than the smoothness values, but, nevertheless, in no proportion to the mathematically obtained P. The effectiveness of this experiment is evident as it shows that even the softest rubber, by the relatively small pressure of 1 kg. per cm² will make no impression on the finer roughness of the paper suface.

(2) We obtained somewhat better values by imbedding the test paper between celluloid softened in acetone, after the pasted test paper was cut to the inner and oute radius of the Sockle. But even these values, as may be determined from the table, are still remote from the mathematically calculated P. By removing the paper from the celluloid one can determine without further calculation that the upper paper surface did not indent all the rugosities of the softened celluloid.

(3) In order to eliminate even the finest rugosities of the paper's upper surface, without however permitting the caulking medium below the paper surface to enter into the paper meanwhile, samples of the 4 papers were strongly silvered by means of cathode rays. The extraordinary smallness and the high rapidity of the thrown-off silver

TABLE I

| | | Type Paper | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | a | b | c | d | e | f | g |
| Thickness ..... d (mm) | | 0.061 | 0.057 | 0.097 | 0.139 | 0.18 | 0.23 | 0.25 | 0.29 | 0.41 | 0.50 | 0.99 |
| Measured Smoothness ..... g(sec) | | 730 | 826 | 377 | 16 | 4 | 5 | 9 | 2.5 | 7 | 15 | 10 |
| Measured "Quer" Cross Porosity ..... p(sec) | | 46 | 54.5 | 111.5 | 14.5 | 1.3 | 18 | 15 | 3.1 | 23 | 27 | 85 |
| Horizontal Porosity P (sec) Measured with | Rubber ..... | 1278 | 1820 | 1390 | 98 | | | | | | | |
| | Celluloid ..... | 2780 | 3150 | 2950 | 175 | | | | | | | |
| | Silver ..... | 14560 | 20310 | 9070 | 475 | | | | | | | |
| | Cathode ..... | 19050 | 22970 | 16820 | 557 | | | | | | | |
| | Dust ..... | 13540 | 28750 | 18200 | 1090 | | | | | | | |
| | Calculated according to $P = 1.92 \frac{p}{d^2}$ | 23735 | 32206 | 22752 | 751 | 77 | 653 | 461 | 71 | 263 | 207 | 166 |
| Multiplier for the smoothness figure ..... $M = \frac{P}{P \cdot g}$ | | 1.03 | 1.02 | 1.03 | 1.02 | 1.06 | 1.01 | 1.02 | 1.04 | 1.03 | 1.03 | 1.07 |

parts enable the obtaining of the desired effect. The smoothening of the remaining inequalities in the upper surface was effected by means of gutta percha folios, carefully avoiding meanwhile the inflow of air. Then the test strip was cut to conform to the inner and outer radius of the Sockle. For measuring, the test paper was placed between the rubber plate and the rubber ring (1).

The results or findings of the thrice repeated experiments follow closely the calculated P-values. In one case, namely with paper sample 4, which represents a very soft paper, the factors obtained in the experiment exceed those obtained in the mathematical calculation, from which one may conclude that in this case the pressure of 1 kg per $cm^2$, plays an important part. The variations in the measuring results are the result in one case of the differences in the paper types and also in the enclosed air.

On the basis if according to (3) obtained values of the horizontal porosity, one determines that the calculated values, according to formula (7), are quite dependable not only in the given instances of the 4 paper types but also in fairly thick papers, the difference between uncorrected and corrected smoothness counts, expressed in the multiplier M, is quite unimportant. This is demonstrated by the 7 additional papers a-g, thick-papers, cardboards, etc., indicated in table. The highest multiplier of 1.07 applies only to a cardboard type product and signifies merely a 7 per cent differential in the corrected smoothness. Surveying the extraordinary sensitivity of the measuring methods (the smoothness numbers of various papers describe a play of from several to tens of thousand seconds); such differences do not play an important part. With thick and extraordinarily porous, and at the same time smooth papers, the horizontal porosity of the measuring result may affect the accuracy of the reading; but in printing papers such falsification is absolutely non-apparent.

### Effect of the Incomplete Caulking of the Paper Upper Surface on Smoothness Measuring

If the foregoing indicates that the horizontal porosity affects the smoothness measure only slightly, then it follows from under b) recapitulated experiments that the caulking of the paper surface cannot be thoroughly consummated by means of a rubber plate, particularly as an air-flow C (Fig. 1) passes between the upturned upper paper surface and the rubber plate, which affects the smoothness measure. The meaning of this flow is not important as it depends on the smoothness effect and that it conforms to the results of practical researches in the law of comparison of similar papers.

Now, in order to thoroughly even out the upper paper surface without unduly complicating the measurements, it is advisable to use an extremely soft rubber, treated with benzine. An even better caulking is obtained when the back of the paper as well as the rubber plate is treated with a mixture of 4 parts of clean beeswax and 3 parts of oil of turpentine (no synthetic stuffs). This mixture is obtained by combining the melted wax with the turpentine oil and care must be taken that this mixture is well stirred and congealed. This paste fills the fine pores of the paper surface quite well without entering, however, deeply into the paper "felt," and thereby affecting the side to be tested.

By observing the above rules, the Bekk tester will afford correct results. Should the exigencies of certain paper types indicate a more drastic elimination of the effect of the upper surface, we suggest the cathode silvering method, described under b). However, this method is both expensive and laborious.

### Conclusion

Horizontal porosity affects the smoothness measure according to the system Bekk-Ullstein only in the very slightest manner. The percentage of measuring error in 1 mm. thick cardboard is only about 7 per cent, but can be thoroughly eliminated by means of cited mathematical formulation.

The disturbing effect of incomplete smoothening of the upper paper surface can be obviated by means of a soft rubber disc treated with benzine; it can be further obviated by means of rubbing the upper side of the paper and rubber disc with the wax mixture. But in the comparison of similar paper types, these precautions are not necessary.

For particular researches the lower paper surface can be treated with cathode silvering, but for the most purposes this is totally unnecessary.

## TAPPI Fall Meeting Movies Available

Roger J. Egan, official fall meeting photographer of the Technical Association, has announced that Almer Coe & Co., 78 E. Jackson Boulevard, Chicago, Ill., is prepared to sell to anyone interested, the interesting films that were taken en route from Chicago to Portland, Ore., of TAPPI Special and also the films of the Pacific Coast logging operation, and the pulp making operations at the Everett Mill of the Soundview Pulp Company, and the Woodfiber Mill of the British Columbia Pulp and Paper Company.

The total cost is $35, but any of the sequences may be purchased separately. The logging pictures cost $20 and those of the pulp mill $22.50.

A complete catalog of the sequences may be obtained from Roger J. Egan, c/o Bulkley, Dunton & Co., 80 E. Jackson Boulevard, Chicago.

## "Industrial Cable"

"Industrial Cable," a new publication of the General Electric Company, Schenectady, N. Y., describes and lists all standard types of insulated wire and cable used by industrials for transmission, distribution and control, and used on or with electric equipment such as mining machinery, locomotives, arc welders, neon signs, etc.

The publication, of 128 pages and with an ornamental cover, does not cover the paper-insulated types of cable, used principally for transmission of large blocks of power at the higher voltages. Such types are custom-built, and generally require the assistance of experienced engineers on both application and installation.

"Industrial Cable," GEA-1838, is a companion to Bulletin GEA-1837, an 80-page publication on "How to Select Insulated Cable. Copies of either are available on request.

## Russian Pulpwood Imports Cease

ALBANY, N. Y., October 29, 1934—Shipping agencies declared this week that the financial rate of exchange between this country and Russia has eliminated Russian pulpwood from the port here. So far this year the local port has not received a single shipment of the product from Russia in contrast to the large quantities brought here last year from Archangel and other ports in that country. Following the opening of the local port a few years ago the pulpwood importations received here from Russia formed the largest part of the tonnage handled and amounted to about 100,000 tons yearly. Shippers are at a loss to explain the falling off in trade except to point out that it is because of the adverse rate of exchange.

# Sprayed Molten Metal Coatings

By E. V. David[1]

**Abstract**

*A review of the merits of sprayed molten metal coatings and, in particular, of the Metalayer Process.*

Corrosion is one of the arch enemies of modern civilization and causes destruction of property estimated at many times that resulting from fires. This is due to the fact that ferrous metals (iron and steel) constitute those which are by far the most widely used in industry, but, unfortunately, are also those most actively attacked by corrosion. Non-ferrous metals (brass, bronze, nickel, etc.), are, as a class, much less liable to corrosion. However, they are more costly, and have less strength and fatigue-resistance. Ordinarily, therefore, engineers much prefer to use iron and steel wherever the surfaces can be effectively protected.

Efforts to prevent corrosion of ferrous metals have taken the form of protective coatings and also of alloying the steel or iron with chromium, nickel, or other element, to make the metal itself rust-resistant. The stainless steels have so far proven too expensive for general use, however, so that protective coatings are still the principal means to combat corrosion.

Paints and varnishes are the cheapest and most widely known and used preservative coatings, but provide only temporary protection in most cases. Bitumastic, asphaltum and cement are employed to a lesser extent. A number of other protective processes have been developed, such as galvanizing, sheraldizing, electroplating, enameling, lead coating and sprayed molten metal coating, the latter being the process which is to be discussed.

In addition to corrosion-resistant coatings, industry has need for heat-resistant coatings, decorative coatings, coatings to add dimension or weight to worn or mismachined parts, coatings to conduct electric currents, fire-resistant coatings and others.

### Metalayer Process

Sprayed molten metal coatings may be applied by different methods, one of which is known as the Metalayer process. This process provides a satisfactory means of applying the various types of metal coatings already mentioned. By this method, any of the commercial metals may be melted, atomized and sprayed in fine molten particles on to any surface, to form an adherent, or separable, metal coating. The coating may be built up to any desired thickness on any material, whether metallic, fibrous, vitreous, conducting, insulating or inflammable. Parts of any size or shape may be metal coated, regardless of location. The application may be made before, during, or after fabrication of the part, either in the shop or in the field.

This process uses no pigments, solvents, fluxes or other vehicles. Commercial metallic wire is the only raw material. While it has a field of its own in mechanical work, for which the other coating processes cannot be employed successfully, it may also be used to advantage as an adjunct for them and, therefore, should not be considered as their competitor.

The process makes it practical to secure on any surface, at low cost, the desirable qualities of the more expensive metals, while using the cheaper and usually stronger material for the bulk or mass of the product. Another unique feature of the process is that one portion of a surface can be coated with one metal and other parts of the same surface with other metals. Alternate layers of as many different metals as desired may be applied, one on top of the other. Non-ferrous metals may be applied to ferrous metals and vice versa. Sprayed metal coatings as applied are instantly cold, hard, dry and ready for use. No waiting time or extra handling time is required.

With this process, metal coatings can be applied when wanted and as wanted, up to any thickness desired. Metals with high melting temperatures may be sprayed on base metals or on previously applied coatings having low melting temperatures. Even wood, fabrics or the thinnest paper may be metal coated without charring.

In the Metalayer process, the metal is sprayed with a self-contained, portable spray gun called Metalayer. This hand tool melts, atomizes and sprays any commercial metal to form coatings on surfaces of any size and shape and of practically any material. Thus, Metalayer may be said to carry out regular foundry practice of melting and pouring metals. The molten metal is in fine particles, however, and is "poured" by a jet of compressed air on the surface to be coated. This method gives a unique control of results and is able to meet and satisfy requirements and demands of great importance. The metal to be sprayed is supplied to Metalayer in the form of wire, of standard Brown & Sharpe gauge.

### Capacity of Metalayer

With the standard spray nozzle held perpendicular to the surface being coated and 5 inches distant from it, the molten metal spray covers a circle approximately 2 inches in diameter. A single pass of Metalayer over a surface sprays a metal coating of from one to two thousandths of an inch in thickness, depending on the metal being sprayed. Each additional pass increases the thickness of the coating by a like amount, until any desired total thickness is obtained. The operator experiences no difficulty in properly guiding and advancing the gun over the surface, as his vision enables him to distinguish clearly between the coated and uncoated portions, as well as between each succeeding pass applied.

Wires of 13, 15, 19 or 20 Brown & Sharpe gauge are sprayed by Metalayer with equal efficiency, it being merely necessary to install the proper wire tip in the gun in each case. Wire feed speeds are adjustable to suit all materials. High melting temperature wires used are of smaller diameter and are fed at lower speeds, while low melting temperature wires used are of larger diameter and are fed at higher speeds. Intermediate diameters and feed speeds are used for wires of medium melting temperature. Metal of any melting temperature up to that of tantalum (5250 deg. F.) can be sprayed by Metalayer. Wire feed speeds used range from 10 feet per minute or less for high melting point wire to 34 feet per minute or more for low melting point wire. Weight of wire used per Metalayer ranges from about 1¼ pounds per hour for iron to about 40 pounds per hour for lead. Weight of metal coatings sprayed per Metalayer ranges from about 1.2 pounds per hour for iron to about 18 pounds per hour for lead. Area metal coated to six thousandths of an inch in thickness per Metalayer ranges from about 6 square feet per hour for iron to about 60 square feet per hour for lead.

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[*] Presented at the fall meeting of the Technical Association of the Pulp and Paper Industry, Portland, Ore., Sept. 10 to 13, 1934.

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The Metalayer process operates with oxygen and acetylene pressure ranging from 13 to 15 lb. per sq. in., depending on the metal being sprayed and the application. Approximately 23 to 26 cubic feet of oxygen, 22 to 25 cubic feet of acteylene, and 2,500 to 3,500 cubic feet of compressed air are consumed per hour per gun. The Metalayer may be regulated within a sufficient range to enable the operator to obtain sprayed metal coatings of the greatest density and coherence under all conditions. However, where certain requirements indicate the desirability of a less dense or a porous coating, this may be accomplished also quite readily.

This process is also adapted for the attachment of a reservoir for metal dust which may be fed into the spray nozzle in place of the usual standard gauge wire. This device is seldom used, however.

### Special Spray Nozzles

For metal coating surfaces inaccessible with the standard nozzle, such as the inner walls of tubes, pipes, and small cylindrical objects, special spray nozzles of rotary, fan and angle types have been developed. Any one of these nozzles may be attached directly to the Metalayer, or used with 30-inch, 60-inch, 80-inch or longer extensions, up to 12 feet in length. The rotary nozzle is for spraying the inner surfaces of tubes from 1 to 4 inches inside diameter. The fan spray nozzle produces a fan-shaped spray, about ⅜-inch by 1½-inch, and is used for metal coating edges or narrow bands on surfaces. The angle spray nozzle changes the direction of the spray to about 45 degrees from the center axis. It is used for surfaces which cannot be reached with the standard straight nozzle.

### Properties of Metal Coatings

Photomicrographs of sprayed molten metal coatings show that they are made up of a multiplicity of plastic particles which, by high velocity impact on a surface, are flattened out and interlocked, first with the microscopic open grain of the surface on which they are deposited, and subsequently with each other.

Sprayed metal is described as coherent, by which is meant the joining of the individual atomized particles in the coating to each other. It is also spoken of as adherent, to indicate the ability of the sprayed particles, and eventually that of the entire coating, to stick to the base material on which they are applied.

For maximum adhesion, the surface of the base metal must be properly roughened. No claim is made that sprayed molten metal coatings are either welded or brazed to the base metal. The firm adhesion obtained is due solely to the mechanical bond. Adhesion and cohesion, together with the porosity, permeability and quality of the metal being sprayed, determine the density and hardness of the coating.

The fineness of grain of the sprayed metal coating influences both its cohesion and adhesion. Small particles are able to join better to each other and to penetrate more easily into the pores of the surface than coarse ones. The possibility of simply bridging over the pores is less when using a fine spray. Hence, the importance of using correct wire feed speeds, oxygen, acetylene and compressed air pressures and technique in operating the Metalayer.

On properly prepared surfaces, correctly applied sprayed metal coatings become practically integral with the surface and show many properties of metals cast in the usual manner. Such coatings may be made practically as dense as castings of the same metal and will serve many purposes for which a sheet metal covering is adapted.

### Metal Coatings vs. Other Types

It is not claimed, nor can it be expected, that sprayed molten metal coatings may be applied as cheaply as many of the less dependable and less permanent surface coverings in common use. It can be stated without reservation, however, that, within their proper purpose and scope, sprayed metal coatings develop a more satisfactory appearance, show better wearing qualities and have a wider field of application than coatings developed by any other method. The extra effort and expense involved in applying sprayed metal coatings are more than compensated for by the greatly improved service which they render, especially where permanence is an essential factor.

### Finishing Metal Coatings

Sprayed molten metal coatings may be polished, ground, turned, filed or otherwise finished, just as cast metal would be. Polishing or grinding require care to avoid cutting through to the base or overheating the surface.

The matte or "sanded" appearance of the surface of metal coatings as applied is especially adapted for securing attractive wire-brushed or scratch-brushed finishes at much lower cost than highly polished finishes. On decorative work, emery cloth or steel wool is used to "highlight" and to polish the high points. Decorative coatings should be protected by lacquering, to retain the original color. Bronzes are often oxidized with liver of sulphur to desired shade.

An allowance of approximately 12 thousandths of an inch in coating thickness should be made for machine finishing of a part, such as a shaft. In turning, fine cuts are taken, using a round-nosed tool for the softer metals and a pointed tool for the harder metals.

### Sand or Grit Blasting

For maximum adhesion of sprayed molten metal coatings to the base metal, a properly roughened surface is essential. Considerable research has been devoted to determine the most suitable and least expensive means of securing such a surface. Knurling, scratch brushing, scaling, pickling, etching, anodic electrical treatment, sand blasting and steel grit blasting were each thoroughly investigated. It was finally established that the best method of preparing a roughened surface with the maximum number of microscopic keys or dovetails required to give sprayed metal coatings the greatest adhesion was by sand or grit blasting. An additional outstanding advantage of sand or grit blasting is that it produces a chemically clean surface on which to spray the molten metal. This is, of course, essential for permanent adhesion and protection. Fortunately, sand or grit blasting is likewise the most economical method of properly preparing surfaces for metal coating.

It was recognized from the start that the necessity of sand or grit blasting surfaces, preparatory to metal coating, would be considered as handicapping the use of the process. Blasting equipment then available did present many objectionable features. However, this has now been perfected to the point where the defects have been eliminated.

Sprayed molten metal coatings should be applied as soon as possible after sand or grit blasting, while the surface is still clean and bright. In no case should more than 24 hours be allowed to intervene between sand or grit blasting and metal coating a surface. If handling of sand or grit blasted surfaces is necessary, it should be done with clean cotton gloves. Such surfaces should be kept free from grease, oil or moisture.

Surfaces of open-grain structure, such as unglazed pot-

tery, terra cotta brick and plaster, do not require sand or grit blasting before metal coating. The Metalayer process may be applied to them in their natural state, without preparation.

### Cost of Metal Coatings

Metal coating costs are dependent upon a number of variables. Assuming average prices for oxygen, acetylene and compressed air, the cost of these items will total about $.80 to $1.30 per Metalayer per hour, depending on the speed of operation. Wire costs may, of course, be determined from the price per pound and the number of pounds used per hour. The price of the wire per pound depends upon the material which is being sprayed.

The cost of metal coating per square foot may be computed by dividing the total hourly cost by the number of square feet coated per hour. The latter is indirectly proportional to the thickness of the coating applied. Assuming a coating of six thousandths of an inch in thickness, which is developed by 4 to 6 passes of Metalayer and is a thickness frequently applied in actual work, the output per Metalayer ranges from about 6 square feet per hour for iron to about 60 square feet per hour for lead. On this basis, wire, gas and compressed air cost per square foot for 0.006-inch coating is about as follows: iron, $.18; lead or zinc, $.11; aluminum, $.09.

These figures do not take into account the "edge loss." Edge losses occur when metal coating near the edge of a surface, as a portion of the molten metal particles is sprayed past the edge and lost. On large surfaces the edge loss is a negligible percentage, but on small surfaces it is appreciable. Sand or grit blasting costs must be added to metal coating costs to obtain the total cost of the Metalayer process for applications where such preparation of the surface is required. These are also very variable, but as a rule do not exceed about $0.03 to $0.05 per square foot.

### Applications of Sprayed Molten Metal Coatings

Corrosion-Resistant Metal Coatings. When dissimilar metals are brought in contact with each other, as in metals coating, and immersed in electrolyte, an electric current will flow from the anodic to the cathodic metal, as determined by their relative position in a list known as the electromotive series of the metals. This list shows that aluminum or zinc are anodic to iron and will protect it from corrosion, but tin or copper are cathodic to iron and will accelerate its corrosion.

Zinc is the most anodic metal which can be practically used for sprayed molten metal coatings to protect iron and steel from atmospheric corrosion. With the Metalayer process, the purity of the zinc, as applied, is maintained, and there is no formation of alloys which will affect the corrosion-resistance of the pure zinc. Aluminum coatings also provide efficient protection against corrosion, particularly where acid conditions or high temperature exist. However, zinc and aluminum protect iron mainly at the expense of their own destruction. Fortunately, these metals do not corrode progressively, but form a tough adherent layer of salts which brings further deterioration practically to a standstill. Therein lies their unusual protective value.

While tin, copper, lead, brass and bronze are *cathodic* to iron and steel, they are used to provide mechanical protection for lining containers to resist acids and similar purposes.

Heat-Resistant Metal Coatings. Sprayed molten aluminum coatings are used not only for corrosion-resistance but also to an increasing extent for retarding deterioration of industrial equipment exposed to high temperatures. The aluminum coated parts are painted with three successive dip or brush coats of potassium silicate and placed in a heat-treating furnace at 1,400 deg. F. for 5 minutes. The temperature of the furnace is then raised to 1,900 deg. F. and the parts allowed to soak for a further period, depending upon their size and other characteristics. This heat treatment produces a ferro-aluminum alloy, penetrating to a considerable depth beneath the coated surface, with a top surface of aluminum oxide. It is exceptionally effective in preventing scaling from heat and greatly increases the durability of such parts. In cooling, the potassium silicate cracks off, but its function has been performed in the heat-treating operation. This combined metal coating and heat-treating process is known as "alumetizing."

Dimension and Weight Adding Metal Coatings. Every machinist has heard the old joke about the "putting on tool." Metalayer is, in reality, exactly that. It may be used in the lathe tool-post for actually turning parts "up" or making them larger, instead of turning them "down." For enlarging cylindrical parts, the work may be placed between lathe centers and revolved, while the Metalayer is traversed lengthwise by the lathe carriage in the same way that a turning tool is employed. The Metalayer process is also frequently applied to flat surfaces that are undersize, the usual method in such cases being to traverse the tool by hand until a coating of the desired thickness has been deposited. The fact that sprayed molten metal coatings may be filed, ground, turned, polished, or otherwise finished, makes the Metalayer process valuable to machine shops and manufacturing plants generally, if only for this one purpose alone.

Repairing Surface Defects. The Metalayer is a valuable tool for repairing surface defects in practically any material. Particularly with castings, sand-holes, blow-holes, and similar defects are apt to occur and cause rejection of the part. Such defects may only show up during machining, after considerable labor and time have been expended on the piece. With the Metalayer, iron, steel, bronze, aluminum, and alloy castings are reclaimed at small expense. The deposited metal may be readily machined or otherwise finished. Forged, drawn and stamped pieces are repaired similarly. The surface is sand blasted and repaired either before or after machining.

Decorative Metal Coatings. The Metalayer is widely used in the decorative field and has virtually unlimited possibilities for this type of work. Besides metal trimmings and the coating of decorative objects, attractive patterns may be produced by means of stencils. Metals of different colors may be used and, by building up coatings, patterns in relief may be produced.

Due to the remarkable control of the operation obtained with the Metalayer, the temperature of the surface being metal coated rises but slightly. Wood, fabrics, or the thinnest paper receive the impacting particles of molten metal without charring. Delicate laces may be used as stencils for producing a pattern.

Plaster-of-Paris figures are well adapted to metal coating. Brick or stone may be coated in the same way. A variety of effects is obtained by polishing or not polishing the surfaces so treated. Applications for Metalayer in the decorative field are limited only by the imagination and artistic ability of the user.

Current-Conducting Metal Coatings. Electric equipment manufacturers usem etal coatings on both conducting and insulating materials to conduct electricity and for various other purposes. For example, lead sprayed on glass furnishes a cheap and effective condenser plate. The coating may be applied to all or any part of the sur-

face of any piece. Terminals may be soft soldered to metal coatings where desired. Other applications include sprayed zinc on radio tubes and coatings for electric, magnetic and thermic shielding effects.

In one instance, carbon resistors were metal coated with copper at the rate of 32,400 per 9-hour day with one Metalayer and one operator. A simple jig and automatic machine control made this possible. The previous method required 10 boys to electroplate 25,000 resistors in 9 hours. Carbon brushes are also sprayed with copper.

MASS COATING SMALL PARTS. Pieces weighing anywhere from a fraction of an ounce up to approximately one pound may be mass coated in bulk with Metalayer. Such parts are placed in a special rumbling barrel, in lots of about one hundred pounds at a time. Sprayed molten metal from the Metalayer is directed on the pieces as the rumbling barrel is rotated mechanically.

The coatings are evenly deposited on the surfaces of the entire lot of parts, in one operation. Threaded parts do not require chasing or re-threading. Hardened pieces do not have their temper affected in any way. Objects are entirely covered by the coating. If desired, they may be ball-polished or rumbled in leather scrap before removal from the barrel. The quality of product, rate of output, and cost of mass coating with the Metalayer compare favorably with any other process for the metal coating of small parts.

**Specific Applications in the Paper Industry**

HYDRAULIC TURBINES:

In the case of turbines equipped with composite water wheels—that is, wheels constructed of formed steel blades cast into cast iron rims and hubs—the pits and cavities in the steel blades adjacent to the rim and those in the rim itself can be repaired with sprayer molten metal. Results to date indicate that the harder metals give better service for this purpose. For pits and cavities in steel blades away from rim, arc welding continues to be the preferred method of repair.

Hydraulic turbine shafts which are pitted and corroded between bearings, are being protected by metal coating. Worn center bearings and packing glands on turbine shafts are built up to size with sprayed molten steel on monel metal.

FOURDRINIER MACHINES:

The frames, stands, bracing, or such parts of Fourdrinier machines subject to corrosion may be sprayed with molten aluminum or zinc. Worn table rolls may be built up with bronze more cheaply than renewing the entire bronze tube, in certain cases. Press roll shells and journals are built up by metal coating.

PAPER DRIERS:

Drier roll shells, where pitted or grooved, have their surfaces restored with sprayed ingot iron. Felt roll journals are rebuilt to size with sprayed high carbon steel.

CALENDER ROLL AND SUPERCALENDER ROLL STACKS:

Worn roll journals are built up with sprayed high carbon steel. Building up of the calender roll shells with sprayed molten metal is not recommended, however.

BEATERS:

Beater engine brass may be sprayed with tin, but tin dipping appears to be satisfactory also for these parts and perhaps somewhat more economical in most cases. Sectional cast iron beater tanks and hoods are metal coated with tin, zinc or aluminum. Beater bed plates are coated in the same manner.

JORDAN ENGINES:

In some instances worn journals may be built up with sprayed molten metal.

STOCK PIPING:

The contamination in the paper from loosened particles of rust and scalei n the stock piping may be overcome by metal coating thei nsides of these pipes. In most cases it is better to taken ew piping and metal coat it on the inside than to take old and rusty piping and spray it and return it to place.

CHEMICAL PIPING:

The chemicals used, their concentration, temperature and other considerations determine the proper metal and thickness to use for spraying the insides of chemical piping for protection from corrosion.

WATER PIPING:

In certain cases, metal coating of water piping is justified.

NOTE:—In metal coating the insides of pipes special nozzles, such as the rotary extension nozzle, the fan spray nozzle and the angle spray nozzle, available with extensions up to 12 feet in length are essential for efficient results.

STOCK TANKS:

Coating the insides of stock tanks with zinc about 0.006-inch thick is decidedly advantageous, for tanks where only stock and water is present.

BLEACH TANKS AND LIQUOR TANKS:

Depending on the chemicals and concentrations used, metal coating of bleach tanks and liquor tanks is warranted, in certain cases.

DIGESTERS:

Where digesters become pitted or corroded on the insides, they may be protected from further deterioration by metal coatings.

PUMP PLUNGERS AND RODS:

Nearly every paper mill has a considerable number of pump plungers, rods and shafts that become scored and worn, which can be built up and maintained in good condition by metal coatings.

MISCELLANEOUS:

There are also a number of miscellaneous applications for metal coatings in paper mills, such as building up journals with high carbon steel where anti-friction bearings are applied and loosen on journal, metal coatings of whipper shafts, rotors in pulp screeens and agitator shafts and plows.

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## To Continue Sulphite Cartel

Decision to continue the European sulphite cartel was arrived at at the last regular meeting of the executive committee, recently held in Copenhagen, according to Acting Commercial Attache Osborn S. Watson, Stockholm. It had been feared in Swedish sulphite circles that dissolution would take place in the near future because of the reported desire of Finnish members for changes in the status of the cartel, but an agreement was reached on all of the important differences. The curtailment in production previously agreed upon will be continued. The minimum prices established for the European market were suspended, but those for the United States' market will be maintained.

# United States Patents On Paper Making,

## Second Quarter, 1934

Compiled by Clarence J. West, Chairman, Committee on Abstracts and Bibliography, TAPPI

The following list of patents has been compiled from the current numbers of the Official Gazette of the United States Patent Office. Since only one claim, in general, is published in the Official Gazette, it is not claimed that this list is complete.

Copies of any of these patents may be obtained from the Patent Office, Washington, D. C., by sending ten cents ($0.10) for each patent desired. At least the number of the patent and the patentee should be given. Personal checks and stamps are not accepted in payment for patents.

### JULY 3, 1934.

1,964,772. Production of pulverized cellulose. Milton O. Schur and Benjamin G. Hoos, assignors to Brown Company, Berlin, N. H. Filed Sept. 3, 1931. 9 claims. (Cl. 92-20). Pulp is refined in an alkaline liquor and then hydrolyzed to a powder whose alpha cellulose content is lower than that of the unrefined cellulose pulp but whose color stability is greater than that of the mechanically pulverized unrefined pulp.

1,964,791. Process of making safety paper. Frank S. Wood, Quincy, Mass. Filed July 22, 1931. 1 claim. (Cl 91-67.95). Continuous operation, a bi-functional step comprising ink set solutions and sizing in such proportions that one does not interfere with the other.

1,964,793. Glycerinated paper. George A. Richter, assignor to Brown Company, Berlin, N. H. Filed Jan. 30, 1932. 1 claim. (Cl. 154-46). A multi-ply paper composed of at least three plies, the internal ply being glycerinated.

1,964,862. Process for the manufacture of moistureproof opaque or transparent paper. Eugène Sonnenfeld, Paris, France. Filed July 20, 1932. 8 claims. (Cl. 92-21). Cellulose derivatives, plasticizers and water-repellant substances are gelatinized and incorporated with pulp.

1,964,934. Protection of animal fibers against the effects of alkaline or acid mediums. Theodor Wallis, Oskar Falek and Paul Virck, assignors to I. G. Farbenindustrie Aktiengesellschaft, Frankfort-on-the-Main, Germany. Filed April 27, 1931. 3 claims. (Cl. 8-20). Use of sulphite waste liquor.

1,964,964. Process of fabricating heat insulating material. Clarence S. Smallish, assignor to American Hair and Felt Company, Chicago, Ill. Filed June 29, 1931. 4 claims. (Cl. 154-28).

1,965,029. Process and apparatus for cutting printed paper webs. Albrecht Bolza, assignor to the Firm Schnellpressenfabrik Koenig und Bauer Aktiengesellschaft, Wurzburg, Bavaria, Germany. Filed June 17, 1929. 16 claims. (Cl. 164-68).

1,965,195. Container closure. Louvern G. Lange, Passaic, N. J. Filed Oct. 22, 1930. 3 claims. (Cl. 91-68). Sheet of fibrous material impregnated with resin, nitrocellulose, a drying oil and raw rubber.

1,965,265. Board structure. John H. Spohn, Jr., San Francisco, Calif. Filed March 2, 1931. 6 claims. (Cl. 154-55).

1,965,274. Machine for making paper boxes. Joseph Zanetti, San Francisco, Cal. Filed June 17, 1929. 7 claims. (Cl. 93-51).

1,965,524. Method and machine for making packages provided with tearing strips. Carl E. Melhorn, assignor to Package Machinery Company, Springfield, Mass. Filed Feb. 28, 1933. 16 claims. (Cl. 93-2).

### JULY 10, 1934.

1,965,579. Method of and apparatus for preparing pulp stock for delivery to a papermaking machine. Phillips Dennett, assignor to Bird Machine Co., South Walpole, Mass. Filed Aug 19, 1932. 4 claims. (Cl. 92-38). The pulp is purified in thin aqueous suspension, thickened, evened and delivered to machine.

1,965,630. Waterproofing fibrous and other materials. Judson A. De Cew, Mount Vernon, N. Y. Filed Sept. 13, 1933. 20 claims. (Cl. 92-21). An ammonium soap and aluminum hydroxide.

1,965,693. Sized paper. Henry V. Dunham, assignor to Casein Manufacturing Company of America, Inc., New York, N. Y. Filed March 27, 1929. 11 claims. (Cl. 91-68). Size contains flour of leguminous seed meal.

1,965,703. Article of manufacture and process of preparing the same. Elmer H. Hyde, assignor to American Tar Products Company, Inc., Pittsburgh, Pa. Filed March 27, 1931. 20 claims. (Cl. 91-68). A fibrous web impregnated with bituminous material.

1,965,719. Method and machine for making laminated paper. Robert F. Nelson, assignor to The Glassine Paper Company, West Conshohocken, Pa. Filed April 8, 1932. 20 claims. (Cl. 154-40). Grease and moisture proof laminated sheet material.

1,965,893. Method of producing perforated paper. John F. Hawley, assignor to Central Waxed Paper Company, Chicago, Ill. Filed Sept. 8, 1933. 1 claim. (Cl. 164-100).

1,966,093. Coating apparatus. Roger L. Griffin, assignor to A. C. Lawrence Leather Company, Boston, Mass. Filed Dec. 12, 1928. 25 claims. (Cl. 91-45).

1,966,109. Paper shredding machine. Harry W. Wilson, San Francisco, Calif. Filed Feb. 24, 1931. 8 claims. (Cl. 164-61).

1,966,153. Log barker. Carl Busch Thorne, Hawkesbury, Ontario, Canada. Filed June 13, 1932. 2 claims. (Cl. 144-208).

1,966,238. Paper for corrugating purposes and process of forming the same. Pierre Drewsen, assignor to Hinde and Dauch Paper Company, Sandusky, Ohio. Filed April 19, 1933. 10 claims. (Cl. 92-13).

1,966,331. Method of controlling a web of flexible material in a winding machine. James A. Cameron, assignor to Cameron Machine Company, Brooklyn, N. Y. Filed Aug. 20, 1931. 1 claim. (Cl. 242-66).

1,966,361. Paper machine. Isaac Stern, assignor to S. and S. Corrugated Paper Machinery Co., Inc., Brooklyn, N. Y. Filed July 19, 1929. 16 claims. (Cl. 93-58). Machine for making box blanks.

### JULY 17, 1934.

R19,240. Process of treating black liquors. Edward G. Goodell, Stevens Point, Wis. Original No. 1,779,535, dated Oct. 28, 1930. Filed Oct. 28, 1932. 15 claims. (Cl. 23-48).

1,966,437. Distended fibrous product. Frank L. Bryant, assignor to Cellufoam Corporation, Chicago, Ill. Filed March 16, 1932. 28 claims. (Cl. 92-21).

1,966,458. Method of saturating fibrous stock. Izador J. Novak, assignor to Raybestos-Manhattan, Inc., Bridgeport, Conn. Filed Dec. 27, 1932. 27 claims. (Cl. 92-40).

1,966,469. Method of manufacture of flanged articles of paper or like material. Elmer Zebley Taylor, Newark, N. J. Filed July 15, 1932. 4 claims. (Cl. 93-36). Drawn flanged closure cap.

1,966,471. Paper cup molding machine. Theodore Walter, assignor to George W. Swift, Jr., Inc., Bordentown, N. J. Filed Nov. 15, 1932. 14 claims. (Cl. 92-57).

1,966,473. Coated article. Charles E. Wooddell, assignor to The Carborundum Company, Niagara Falls, N. Y. Filed Dec. 30, 1932. 2 claims. (Cl. 51-185). Web coated with granular material and metal foil attached to granular surface.

1,966,474. Manufacture of transparent sheets from Musa fiber. Edward Chuncey Worden, 1st, assignor to Hanson and Orth, New York, N. Y. Filed Aug 2, 1930. 1 claim. (Cl. 18-57).

1,966,629. Drying apparatus. Thomas G. Johnson, assignor to The Northwest Paper Company, Cloquet, Minn. Filed Nov. 24, 1930. 3 claims. (Cl. 34-38).

1,966,638. Automatic paper pulp regulator. William R. Morgan, Kenosha, Wis. Filed Jan. 20, 1934. 4 claims. (Cl. 92-46).

1,966,997. Process of producing artificial wood. Stefan Schless, Grodig, near Salzberg, Austria. Filed Nov. 5, 1930. 7 claims. (Cl. 18-47.5).

1,967,032. Apparatus for purifying pulp stock. Sven C. Lindberg, assignor to Centrifugal Engineering and Patents Corporation, New York, N. Y. Filed March 18, 1930. 6 claims. (Cl. 233-45). Centrifuge.

1,967,043. Production of adhesives and surfacing materials. Chester Snyder, assignor to Angola Chemical Corporation, New York, N. Y. Filed Sept. 17, 1932. 11 claims. (Cl. 134-11). Jelutong gum, castor oil and alcohol is used as a waterproofing agent.

1,967,062. Waterproof asbestos sheet and method of producing same. Izador J. Novak, assignor to Raybestos-Manhattan, Inc., Bridgeport, Conn. Filed Dec. 19, 1931. 3 claims. (Cl. 91-68).

1,967,171. Machine for manufacturing spirally found straws and other tubes. James Balton, assignor to Joseph Shapiro, Baltimore, Md. Filed June 22, 1932. 9 claims. (Cl. 93-80).

### JULY 24, 1934.

1,967,212. Bag making machine. True M. Avery, assignor to Union Bag and Paper Corporation, Hudson Falls, N. Y. Filed Oct. 11, 1932. 15 claims. (Cl. 93-18).

1,967,224. Frictional element and method of making the same. Simon Collier and Ralph H. Soulis, assignors to Johns-Manville Corporation, New York, N. Y. Filed Oct. 25, 1932. 18 claims. (Cl. 92-67).

1,967,262. Machine for grooving fibrous board. John T. Robinson and Theodore A. Schwamb, Boston, Mass. Filed Dec. 23, 1931. 14 claims. (Cl. 164-60).

1,967,275. Impregnating porous objects. Ira Williams, assignor to E. I. du Pont de Nemours and Company, Wilmington, Del. Filed May 21, 1931. 14 claims. (Cl. 91-68). Porous material is impregnated with 2-chloro-1, 3-butadiene and polymerized.

1,967,347. Process for producing a cellulose of high content of alpha cellulose. Alfons Bayerl, assignor to I. G. Farben-industrie Aktiengesellschaft, Frankfort-on-the-Main, Germany. Filed Oct. 3, 1933. 6 claims. (Cl. 92-9). Chlorine and alkali.

1,967,361. Pulp molding machine. Ellis C. Healy, assignor to Holed-Tite Packing Corporation, New York, New York, N. Y. Filed March 16, 1929. 42 claims. (Cl. 92-56).

1,967,419. Roofing machine. Albert E. F. Moone, assignor to the Lehon Company, Chicago, Ill. Filed Oct. 10, 1932. 20 claims. (Cl. 91-43).

1,967,529. Method of making leather substitutes. James G. Grower, assigner to Respro, Inc., Cranston, R. I. Filed Dec. 8, 1933. 10 claims. (Cl. 91-68).

1,967,583. Transparency meter. Maynard D. McFarlane and William Baumrucker, Jr., New York, N. Y. Filed Dec. 15, 1932. 1 claim. (Cl. 88-14).

1,967,600. Paper cutting machine. Ralph S. Tyler and Herbert McGeorge, assignors to The Chandler and Price Company, Cleveland, Ohio. Filed Feb. 26, 1932. 4 claims. (Cl. 164-54).

1,967,609. Process of drying crinkle or crepe paper. John C. Corcoran, assignor to Superior Tool and Manufacturing Co., Inc., Worcester, Mass. Filed Sept. 12, 1931. 2 claims. (Cl. 34-24).

1,967,700. Wrapper. Edward H. Angier, assignor to Angier Laboratories, Framingham, Mass. Filed April 21, 1932. 9 claims. (Cl. 154-52).

1,967,704. Method of and apparatus for molding articles from fiber. Percy L. Bunn, Three Rivers, Mich. Filed June 24, 1932. 12 claims. (Cl. 92-57). Paper gloves.

1,967,726. Apparatus for the treatment of toilet paper. Harold W. Sherman, assignor to Northern Paper Mills, Green Bay, Wis. Filed April 20, 1931. 2 claims. (Cl. 154-30).

1,967,844. Shot shell tube. Alfans G. Schuricht, assignor to Wester Cartridge Company, East Alton, Ill. Filed June 30, 1932. 3 claims. (Cl. 93-94). Metal is sprayed on a sheet of paper and the sheet wound into a tube.

1,967,856. Method and apparatus for treating shingles or shingle strips. Bernard C. Beckman, assignor to Patent and Licensing Corporation, Boston, Mas. Filed Feb. 19, 1932. 4 claims. (Cl. 91-68).

1,967,922. Slitting and winding machine. James A. Cameron, assignor to Cameron Machine Company, Brooklyn, N. Y. Filed March 28, 1930. 16 claims. (Cl. 164-65).

1,967,967. Artificial leather. Max Nathan Nickowitz, assignor to E. I. du Pont de Nemours and Company, Wilmington, Del. Filed Aug. 9, 1932. 2 claims. (Cl. 91-68). Mercerized paper is treated with rubber.

### JULY 31, 1934.

1,968,028. Slice for paper making machines. William B. Clements, assignor to Bryant Paper Company, Kalamazoo, Mich. Filed May 27, 1933. 14 claims. (Cl. 92-44).

1,968,140. Plastic wax board liner. Daniel M. Gray, assignor to Hazel-Atlas Glass Co., Wheeling, W. Va. Filed June 10, 1930. 2 claims. (Cl. 215-38). Pulp board coated with a mixture of 88 per cent paraffin and 12 per cent rubber.

1,968,223. Process of treating paper pulp. Gotthard Rosen, Paris, France. Filed Nov. 23, 1932. 13 claims. (Cl. 92-9). Pulp is washed with various chemicals prior to bleaching.

1,968,242. Slitting means. Gustaf Birger Birch, assignor to Cameron Machine Company, Brooklyn, N. Y. Filed June 9, 1927. 3 claims. (Cl. 164-70).

1,968,279. Apparatus for decorating webs of material such as paper, cloth and the like. Russell S. Bracewell, assignor to Marvellum Company, Holyoke, Mass. Filed April 10, 1930. 19 claims. (Cl. 91-9).

1,968,345. Treating sulphite pulp. Harold R. Murdock, assignor to The Champion Fibre Company, Canton, N. C. Filed April 3, 1933. 7 claims. (Cl. 92-21). A resinous sulphite pulp is treated with an alkaline reagent to disperse the resin, which is then precipitated on the fibers.

1,968,418. Manufacture of fiber products. Treadway B. Munroe and Marion D. Coulter, Chicago, Ill. Filed Oct. 30, 1930. 7 claims. Issued July 31, 1934. (Cl. 92-21). Ferric chloride and arsenious acid are added to the material.

1,968,437. Art of stiffening. Willis A. Boughton, assignor to Bennett Box Co., Boston, Mass. Filed June 8, 1928. 2 claims. (Cl. 92-21). Composition sheet containing a viscous-hardenable liquid.

1,968,468. Mercerization and purification of cellulose fiber. Milton O. Schur and Benjamin G. Hoos, assignors to Brown Company, Berlin, N. H. Filed July 3, 1930. 18 claims. (Cl. 260-10).

1,968,535. Process and apparatus for making building strips. Albert E. F. Moone, assignor to Lehon Company, Chicago, Ill. Filed Jan. 28, 1931. 14 claims. (Cl. 91-67.9).

1,968,636. Rewinding machine. Charles A. Dickhaut, assignor to John Waldron Corporation, New Brunswick, N. J. Filed Nov. 14, 1931. 5 claims. (Cl. 242-75).

AUGUST 7, 1934

1,968,897. Device for gumming tape. Ralph L. Meader, Lynbrook, N. Y. Filed Dec. 12, 1929. 7 claims. (Cl. 91-14.5).

1,968,907. Composition of matter. David E. Pearsall, assignor to The Ensign-Bickford Co., Simsbury, Conn. Filed Aug. 5, 1931. 6 claims. (Cl. 1134-15). Waterproofing composition which is non-tacky and will not stain white paper, containing petrolatum wax, ester gum and paraffin.

1,968,911. Waxing machine. Adolph Potdevin, assignor to Potdevin Machine Company, Brooklyn, N. Y. Filed Feb. 7, 1931. 11 claims. (Cl. 91-55).

1,968,994. Process of bleaching wood pulps and an apparatus for carrying out said process. David B. Davies, Shelton, Wash. Filed April 8, 1931. 2 claims. (Cl. 8-2).

1,969,000. Dandy roll. Ralph E. Freeman, assignor to Cheney Bigelow Wire Works, Springfield, Mass. Filed March 5, 1934. 2 claims. (Cl. 92-48).

1,969,073. Mechanism for straightening sheet material. John A. Hamre, assignor to The Western Union Telegraph Company, New York, N. Y. Filed May 3, 1932. 7 claims. (Cl. 92-70).

1,969,074. Roofing and siding element and method of producing contrasting effects thereon. Norman P. Harshberger, assignor to Bakelite Building Products Co., Inc., New York, N. Y. Filed April 11, 1930. 3 claims. (Cl. 91-67.9).

1,969,095. Pulp yarn or twine. George A. Richter, assignor to Brown Company, Berlin, N. H. Filed Nov. 4, 1931. 8 claims. (Cl. 117-60).

1,969,106. Adhesive applying and registering mechanism. Edwin G. Staude, Minneapolis, Minn. Filed Oct. 31, 1930. 43 claims. (Cl. 93-36).

1,969,140. Paper machinery. Herman L. Kutter, assignor to The Black-Clawson Company, Hamilton, Ohio. Filed April 19, 1932. 6 claims. (Cl. 92-49). Cooperating upper and lower rolls, bearing block for upper roll, lever operating arm, etc.

1,969,156. Heat insulating material. Carl H. Schuttler, Aurora, Ill. Filed Jan. 8, 1930. 12 claims. (Cl. 92-21). Mineral wool fibers cemented with magnesium sulphate.

1,969,164. Crinkled coated surface. Karel Toll, assignor to Chadeloid Chemical Company, New York, N. Y. Filed Nov. 17, 1931. 11 claims. (Cl. 91-68). Addition of a stabilizing agent compensating for the crinkle modifying effect of the pigment to the coating mixture.

1,969,291. Artificial wool board and a process for manufacturing the same. Alwin Antoni, Roth, near Gelnhausen, Germany. Filed May 4, 1932. 18 claims. (Cl. 154-2).

1,969,367. Pulp wood reclaimer. Keith O. Guthrie, Pleasantville, N. Y. Filed Jan. 10, 1931. 15 claims. (Cl. 198-171).

1,969,420. Pulp beating and washing engine. Melvin A. Mills, assignor to Elizabeth M. O'Neil, Watertown, N. Y. Filed Feb. 11, 1930. 4 claims. (Cl. 92-24).

1,969,421. Production of paper pulp. Peter A. Paulson, Appleton, Wis. Filed Nov. 5, 1932. 5 claims. (Cl. 92-11). A method of supplying steam to sulphitic digesters.

1,969,546. Method and apparatus for showing uniformity of sheet formation in paper making machines. Arthur E. Broughton, Wisconsin Rapids, Wis. Filed Dec. 26, 1933. 13 claims. (Cl. 92-44). Method of measuring the rate of water flow from at least one suction head over which the pulp web passes in the machine.

1,969,592. Paper manufacture. Leon M. Yoerg, assignor to American Writing Paper Company, Holyoke, Mass. Filed Nov. 16, 1932. 1 claim. (Cl. 91-70). Method of making paper having hardened surfaces, in which formaldehyde reacts with the animal glue sizing material.

1,969,606. Apparatus for testing the fastness to light or dyes, ink or other color materials. Robert Oswald Hall, assignor to Ontario Research Foundation, Toronto, Canada. Filed June 13, 1932. 10 claims. (Cl. 88-14).

1,969,636. Adhesive. Gardner R. Alden, assignor to Dennison Manufacturing Company, Framingham, Mass. Filed Sept. 8, 1931. 16 claims. (Cl. 216-62).

1,969,707. Paper of increased opacity. Albert B. Hurley, assignor to National Paper Process Company, New York, N. Y. Filed June 27, 1929. 1 claim. (Cl. 88-1). White paper covered on both sides with a normally invisible but light resisting tinted screen or checkerboard.

AUGUST 14, 1934

1,969,849. Blank making. Cutler D. Knowlton, assignor to Hoague-Sprague Corporation, Lynn, Mass. Filed April 21, 1932. 9 claims. (Cl. 93-56).

1,969,855. Paper fabric and other products. George A. Richter and Milton O. Schur, assignors to Brown Company, Berlin, N. H. Filed Feb. 4, 1931. 2 claims. (Cl. 139-420).

1,969,856. Paper sizing and composition therefor. George A. Richter, assignor to Brown Company, Berlin, N. H. Filed Sept. 11, 1931. 5 claims. (Cl. 91-68). Glue and mechanically gelatinized cellulose pulp are used.

1,969,900. Towel. Oscar A. Pickett, assignor to Hercules Powder Company, Wilmington, Del. Filed Sept. 3, 1932. 3 claims. (Cl. 87-23). Paper towel carrying a detergent composition.

1,969,914. Apparatus for barking logs. Ernest G. Swigert, Portland, Oreg. Filed April 25, 1933. 1 claim. (Cl. 144-208).

1,969,938. Method of making composite paper. Jere C. Mosher, Minneapolis, Minn. Filed Oct. 15, 1932. 2 claims. (Cl. 154-33). Method of uniting a strip of tough paper and one of soft paper by moistening and creping and finally drying.

1,970,000. Crowning attachment for roll grinding machines. Howard W. Dunbar and Carl G. Flygare, assignors to Norton Company, Worcester, Mass. Filed Dec. 4, 1933. 10 claims. (Cl. 51-94).

1,970,029. Method of and apparatus for forming channeled strips. Albert Harold Brunner and Harry H. Tice, assignors to Schumacher Wall Board Corporation, Los Angeles, Calif. Filed July 7, 1933. 10 claims. (Cl. 93-84).

1,970,047. Manufacture of match packages. Willy Lück, assignor to Patentzuender Union Aktiengesellschaft, Vaduz, Lichtenstein. Filed Jan. 12, 1933. 10 claims. (Cl. 93-2).

1,970,065. Process of bleaching pulp and other lignified materials. George H. Tomlinson, Montreal, Quebec, Canada. Filed Sept. 28, 1931. 10 claims. (Cl. 8-2). Continuous process using chlorine.

1,970,148. Process for the continuous treatment of vegetables with soda and gaseous chlorine for the industrial production of cellulose. Umberto Pomilio, assignor to Alessandro Pomilio, Francaville al Mare, Italy. Filed May 19, 1933. 3 claims. (Cl. 92-16).

1,970,180. Paper making machine. Samuel Milne, Edinburgh, Scotland. Filed May 22, 1933. 3 claims. (Cl. 34-48). Apparatus for drying in an M. G. or Yankee machine.

1,970,227. Paper making. Leroy D. Frisbie assignor to Westfield River Paper Company, Inc., Russell, Mass. Filed March 29, 1934. 4 claims. (Cl. 92-76). Method of increasing the uniformity of transparency of glassine paper.

1,970,258. Manufacture of pulp. Clinton K. Textor, assignor to the Northwest Paper Company, Cloquet, Minn. Filed Oct. 18, 1929. 15 claims. (Cl. 23-129). Sodium carbonate solution is treated with sulphur dioxide until an alkalinity of about pH 7.5 to 9.5 is attained.

1,970,273. Production of materials, decorative articles and protecting linings or the like, by the transformation of fibrous cellulose materials. Valentino Bosso, Nicolo Silvestrini and Francesco Sacchi, assignors to Guido Botto, Paris, France. Filed July 9, 1932. 16 claims. (Cl. 92-40).

1,970,292. Fiber testing apparatus. Henry Ewing and Robert Pierce Roberts, assignors to Celanese Corporation of America, a Corporation of Delaware. Filed July 27, 1929. 7 claims. (Cl. 265-2). Apparatus for testing the strength of fibers.

1,970,330. Screening and refining of fiber. William H. Mason, assignor to Masonite Corporation, Laurel, Miss. Filed June 17, 1932. 20 claims. (Cl. 92-26).

1,970,426. Paper making process. Harold L. Levin, assignor to The Patent and Licensing Corporation, New York, N. Y. Filed Nov. 9, 1932. 21 claims. (Cl. 92-21). Method of shredding fibrous material containing not more than 10 per cent moisture with a solid fusible binder to produce an intimate mixture, suspending the mixture in water and forming a fibrous product from the pulp.

1,970,431. Method and apparatus for making shingle elements. Frederick C. Overbury, assignor to The Patent and Licensing Corporation, Boston, Mass. Filed Nov. 27, 1931. 9 claims. (Cl. 91-14).

1,970,521. Freeness tester. Arthur B. Harvey, assignor to the Gardner-Richardson Company, Middletown, Ohio. Filed April 25, 1931. 11 claims. (Cl. 73-51).

AUGUST 21, 1934

1,970,580. Box making. George H. Snyder, Glenside, and Allen G. Snyder, Chestnut Hill, Pa. Filed Dec. 29, 1932. 8 claims. (Cl. 229-44).

1,970,581. Box making machine. George H. Snyder, Glenside, and Allen G. Snyder, Chestnut Hill, Pa. Filed March 29, 1933. 17 claims. (Cl. 93-58).

1,970,582. Box making. George H. Snyder, Glenside, and Allen G. Snyder, Chestnut Hill, Pa. Filed July 25, 1933. 16 claims. (Cl. 229-23).

1,970,608. Apparatus for molding articles from paper pulp. Horace Z. Landon, Newton, Mass. Filed April 1, 1932. 9 claims. (Cl. 92-57).

1,970,742. Method of making fiber products. August Gerard and Maurice Weisman, assignors to Cotten-Wood Products, Inc., Reading, Mass. Filed March 23, 1931. 5 claims. (Cl. 154-33). A cushioned product from waste paper.

1,970,746. Insulation unit. Ralph V. Grayson and Edgar G. Ballenger; said Grayson assignor to Patent and Security Holding Corporation, Tampa, Fla. Filed Nov. 11, 1931. 4 claims. (Cl. 154-45).

1,971,162. Method of making asbestos board. Izador J. Novak, assignor to Raybestos-Manhattan, Inc., Bridgeport, Conn. Filed Feb. 17, 1932. 11 claims. (Cl. 92-21).

1,971,274. Manufacture of water-repellent papers of high wet strength. George A. Richter and Milton O. Schur, assignors to Brown Company, Berlin, N. H. Filed Sept. 2, 1932. 17 claims. (Cl. 91-70). Paper impregnated with regenerated cellulose and enveloped with wax.

1,971,296. Pulp and paper making machine. Russell Carpenter, Wayagamack Island, Three Rivers, Quebec, Canada. Filed July 18, 1932. 12 claims. (Cl. 92-39). Combination with pulp or paper making machine of a sample sheet forming, drying and weighing apparatus functioning periodically to produce a sample sheet having a bone dry weight bearing a predetermined relation to the bone dry weight of the pulp or paper forming on said machine.

AUGUST 28, 1934

R19,288. Method of treating fibrous materials. Thomas W. Bacchus, assignor to Hercules Powder Company, Wilmington, Del. Original No. 1,856,453, dated May 3, 1932. Reissue filed May 22, 1932. 9 claims. (Cl. 92-7).

1,971,335. Apparatus for refining of raw materials. Raymond C. Benner and Albert L. Ball, assignors to The Carborundum Company, Niagara Falls, N. Y. Filed Dec. 1, 1932. 11 claims. (Cl. 92-27). A pulp refining engine.

1,971,398. Coating material useful in the manufacture of artificial leather. Alfons Fausten, assignor to I. G. Farbenindustrie Aktiengesellschaft, Frankfort-on-the-Main, Germany. Filed Dec. 10, 1928. 4 claims. (Cl. 134-79). Contains nitrocellulose, camphor, castor oil, lamp black and alcohol.

1,971,564. Process of manufacturing sulphite pulp. Ernst Hochberger assignor to Canadian International Paper Company, Montreal, Quebec, Canada. Filed June 3, 1933. 8 claims. (Cl. 92-11). Wood is cooked with sulphite liquor, the liquor removed and the material cooked with water to liberate the fiber.

1,971,641. Means for marking paper in process of manufacture. Fred H. Carey, Camas, Wash. Filed March 12, 1934. 14 claims. (Cl. 92-48). A relatively soft surfaced top roll and a hard surfaced bottom roll.

1,971,776. Liquid scale. William P. Feeney, Mosinee, Wis. Filed Oct. 16, 1933. 4 claims. (Cl. 92-46). A stock regulator.

1,971,789. Paper coating machine. Albert Lester, Chicago, Ill. Filed Sept. 22, 1930. 13 claims. (Cl. 91-33).

1,971,966. Process of manufacturing positive sensitized paper. Sueo Sakurai, assignor to Zaidan Hojin Rikagaku Kenkyujo, Tokyo, Japan. Filed March 10, 1928. 4 claims. (Cl. 95-7).

1,971,992. Machine for making paper or card matches. Frank Schafer, Duluth, Minn. Filed Sept. 14, 1931. 11 claims. (Cl. 144-51).

1,972,011. Process for manufacturing carbon papers. Armand Deplanche, Paris, France. Filed May 26, 1932. 1 claim. (Cl. 91-70). Process of coating paper.

1,972,021. Machine for making boxes. Harold S. Labombarde, assignor to The International Paper Box Machine Company, Nashua, N. H. Filed April 3, 1930. 20 claims. (Cl. 93-49).

1,972,028. Roof covering. Harry T. Nichols, Bridgeport, Conn. Filed July 30, 1931. 4 claims. (Cl. 108-7). A shingle.

1,972,058. Impregnated sheet products. George A. Richter, assignor to Brown Company, Berlin, N. H. Filed July 28, 1932. 1 claim. (Cl. 91-70). Waterlaid web impregnated with bituminous material.

1,972,062. Machine for making sanitary napkins. Charles J. Greiner and Oscar T. Thompson, assignors to International Cellucotton Products Company, Chicago, Ill. Filed Nov. 17, 1933. 12 claims. (Cl. 223-15).

SEPTEMBER 4, 1934

R19,301. Indented paper. William H. Ellis, Jr., Glendale, Ohio. Original No. 1,863,973, dated June 21, 1932. Reissue filed June 18, 1934. 4 claims. (Cl. 154-55).

1,972,127. Tapered shingle and process of making the same. Paul O. Beeson, assignor to The Ruberoid Co., New York, N. Y. Filed June 5, 1931. 3 claims. (Cl. 92-42).

1,972,131. Method and apparatus for producing roofing elements. Marius S. Darrow, assignor to The Barber Asphalt Company, Philadelphia, Pa. Filed Oct. 2, 1933. 4 claims. (Cl. 164-17).

1,972,271. Metering pump for cellulose compounds. Frederic McIntyre, Newton, Mass. Filed May 12, 1928. 18 claims. (Cl. 103-126).

1,972,389. Paper making machine. William R. McPherson and Peter J. Van Norden, Otsego, Mich. Filed Nov. 20, 1933. 24 claims. (Cl. 92-43). Pulp vay, cylinder mold, etc.

1,972,392. Paper making machine. William J. O'Brien, Syracuse, N. Y. Filed Nov. 9, 1931. 2

claims. (Cl. 34-48). Heat regulator for paper making machine.

1,972,448. Adhesive composition. Russell L. Jenkins, assignor to Swann Research, Incorporated, Anniston, Ala. Filed July 22, 1932. 12 claims. (Cl. 87-17). Chlorinated polyphenols, a plasticizer and a pigment.

1,972,457. Device for spreading latex and the like. Raymond J. O'Brien and Francis R. Chappell, assignors to Naugatuck Chemical Company, Naugatuck, Conn. Filed July 28, 1930. 6 claims. (Cl. 91-53).

1,972,493. Insulating blocks and process of making the same. Edward R. Powell, assignor to Johns-Manville Corporation, New York, N. Y. Filed Jan. 29, 1932. 13 claims. (Cl. 92-21).

1,972,500. Insulating material. Edward A. Toohey and Earle R. Williams, assignors to Johns-Manville Corporation, New York, N. Y. Filed Sept. 26, 1931. 10 claims. (Cl. 154-45). Waterproof corrugated paper.

1,972,699. Machine for making box partitions. William J. Beck, assignor to Traver Paper and Manufacturing Co., Chicago, Ill. Filed March 30, 1932. 41 claims. (Cl. 93-37).

1,972,736. Viscosity indicating device. Richard J. Haug, Nashua, N. H. Filed May 22, 1929. 24 claims. (Cl. 265-11).

1,972,810. Asphalt prepared building material and method of making same. Jules L. Wettlaufer, assignor to The Patent and Licensing Corporation, Boston, Mass. Filed Dec. 2, 1931. 2 claims. (Cl. 91-67.9).

SEPTEMBER 11, 1934

1,972,869. Moistureproof material and method of making same. William Hale Charch, William L. Hyden and John C. Siemann, assignors to Du Pont Cellophane Company, Inc., New York, N. Y. Filed Nov. 4, 1932. 50 claims. (Cl. 91-68).

1,972,952. Machine for making cigar wrappers. Harry Radzinsky, Great Neck, N. Y. Filed Dec. 7, 1933. 17 claims. (Cl. 93-1).

1,972,996. Shot shell and process of making same. Edwin J. Johnson, assignor to Canadian Industries Limited, Montreal, Canada. Filed July 18, 1931. 27 claims. (Cl. 102-16). Paper is impregnated with wax and coated with pyroxylin.

1,973,339. Method of producing ornamental building paper. Joseph B. Fleming, assignor to Fleming and Sons, Inc., Dallas, Texas. Filed July 21, 1933. 2 claims. (Cl. 101-426). Method of drying and printing paper with colored designs.

1,973,406. Cup making machine. Henry B. Cooley, assignor to The American Paper Goods Company, Montclair, N. J. Filed Feb. 1, 1933. 11 claims. (Cl. 93-39).

1,973,557. Production of pulp, etc. Linn Bradley and Edward P. McKeefe, assignors to Bradley-McKeefe Corporation, New York, N. Y. Filed Aug. 8, 1925. 16 claims. (Cl. 92-11). Wood is treated with sodium sulphite, carbonate and bicarbonate.

1,973,637. Process of utilizing fibrous materials. Elbert C. Lathrop and Fergus A. Irvine, assignors to The Celotex Company, Chicago, Ill. Filed June 7, 1930. 9 claims. (Cl. 92-9). Disintegration of fibrous material in the presence of an alkali highly buffered to maintain substantial neutrality.

1,973,690. Calendering machine. Archibald Lade, Northampton, Mass. Filed Jan. 26, 1932. 4 claims. (Cl. 92-77).

SEPTEMBER 18, 1934

1,973,692. Paraffin emulsion and the like and process of making the same. Hubert L. Becher, assignor to Bennett, Incorporated, Cambridge, Mass. Filed Oct. 30, 1928. 14 claims. (Cl. 134-1).

1,973,722. Paper and method of making same. William C. Nash, assignor to Seaman Paper Company, Chicago, Ill. Filed May 16, 1932. 14 claims. (Cl. 92-39). Paper comprising cotton-silk fibers and relatively heavy fibers, the heavy fibers being adjacent to the surface.

1,973,863. Method and apparatus for making roofing. Daniel C. Betjeman, assignor to The Patent and Licensing Corporation, Boston, Mass. Filed Oct. 21, 1931. 8 claims. (Cl. 164-17).

1,973,864. Centrifugal sieving machine. Andreas Biffar, Miltenberg-on-the-Main, Germany. Filed May 25, 1932. 11 claims. (Cl. 92-34). Horizontal centrifugal sieving machine.

1,973,931. Shingle. Thomas Robinson, assignor to Lancaster Asphalt, Incorporated, New York, N. Y. Filed Sept. 3, 1931. 3 claims. (Cl. 108-8).

1,974,047. Shingle and method of producing the same. Norman P. Harshberger, assignor to Bakelite Building Products Co., Inc., New York, N. Y. Filed Mar. 3, 1932. 16 claims. (Cl. 108-7).

1,974,103. Manufacture of paper. John C. Corcoran, assignor to Superior Tool and Manufacturing Co., Inc., Worcester, Mass. Filed July 1, 1932. 10 claims. (Cl. 92-44). Method of flowing stock on the wire.

1,974,192. Apparatus for folding paper linings. Hale Paxton, assignor to Paxton Credit Corporation, Sanger Cal. Filed Dec. 24, 1930. 11 claims. (Cl. 93-2).

1,974,325. Guard strip. Joseph John Banas, Niagara Falls, N. Y. Filed Aug. 14, 1933. 3 claims. (Cl. 92-40). Method of trimming pulp sheet.

SEPTEMBER 25, 1934

R19,325. Method of treating fibrous materials. Leo A. Goodman, Brooklyn, N. Y. Original No. 1,829,702 dated October 27, 1931. Reissue filed October 4, 1933. 37 claims. (Cl. 17-45).

1,974,408. Machine and method of making knockdown boxes. Samuel Bergstein, Cincinnati, Ohio. Filed May 7, 1934. 20 claims. (Cl. 93-49).

1,974,420. Digesting process and apparatus. Thomas L. Dunbar, Watertown, N. Y. Filed Sept. 5, 1933. 22 claims. (Cl. 92-7). Method of circulating cooking liquor from storage tank through digester and back into the storage tank.

1,974,477. Coating for stereotype matrices. Louis G. Walters, assignor to Electrographic Corporation, New York, N. Y. Filed June 15, 1933. 6 claims. (Cl. 91-68). A solution of colloidal-graphited water and starch suspended in water.

1,974,493. Disbarking machine. Karl Gustaf Hellner, Nalden, Sweden, assignor to one-half of Axel Gustaf Johansson, Nalden, Sweden. Filed March 10, 1931. 14 claims. (Cl. 144-208).

1,974,594. Reenforcing paper. Edward H. Angier, Framingham, Mass., assignor to Edward H. Angier, as trustee. Filed December 29, 1931. 3 claims. (Cl. 154-2). Reenforced waterproof paper.

1,974,651. Pulp screening machine. Anton Joseph Haug, Nashua, N. H. Filed March 17, 1933. 17 claims. (Cl. 92-34).

1,974,679. Apparatus for purifying pulp stock. Sven C. Lindberg, assignor to Centrifugal Engineering and Patents Corporation, New York, N. Y. Filed September 3, 1930. 3 claims. (Cl. 233-20). A centrifuge.

1,974,707. Composition shingle. Monroe A. Fer Don, Indianapolis, Ind. Filed January 28, 1931. 2 claims. (Cl. 108-7).

1,944,751. Chemical pulping process. George A. Richter, assignor to Brown Company, Berlin, N. H. Filed Jan. 6, 1934. 10 claims. (Cl. 92-11). In a smelt containing sodium sulphide and sodium carbonate, the carbonate is removed and converted into sulphite and chips impregnated with the liquor from which the carbonate has been removed, are pulped with the sulphite.

1,974,755. Conditioning of viscose solutions for impregnation and other purposes. Milton O. Schur, assignor to Brown Company, Berlin, N. H. Filed April 28, 1932. 12 claims. (Cl. 260-100).

1,975,057. Transfer device. Louis C. Antrim, assignor to Autographic Register Company, Hoboken, N. J. Filed July 13, 1932. 8 claims. (Cl. 197-172). Method of treating papers.

# Pulp and Paper Industry Literature Review

## Abstracts of Articles and Patents Compiled by the Abstracts and Bibliography Committee of the Technical Association of the Pulp and Paper Industry, A. Papineau- Couture, John F. Ohlson, C. E. Peterson and Clarence J. West, Chairman

**Copies of United States Patents can be obtained from the United States Patent Office, Washington, D. C., for 10 cents each. Send currency, not stamps.**

### Machinery

**Waxing Attachment for Paper Machines.** Karl M. Thorsen assignor to Central Paper Co. U. S. pat. 1,951,681 (March 20, 1934).—One or more "water boxes" are provided to contact with a corresponding number of the calender rolls along their full length and apply a liquid waxing agent to the paper passing through the calender. The supply tank, auxiliary feeding tanks, water boxes and all the piping through which the wax passes are steam heated or steam jacketed. Means are provided for maintaining a constant liquid level in the water boxes.—A. P.-C.

**Paper Making Machines.** Robert McC. Johnstone. U. S. pat. 1,957,963 (May 8, 1934).—The surface of the table rolls is provided with shallow cavities (0.003 to 0.008 inch deep) to set up capillary attraction between the wire and the surfaces of the cavities. The depth of the cavities decreases from the breast roll end to the couch roll end of the machine.—A. P.-C.

**Fourdrinier Paper Machine.** J. A. Laurent Blais and Henry P. Hamelin. U. S. pat. 1,959,520 (May 22, 1934).—The usual suction couch roll is replaced by a pair of suction rolls (both inside the wire) with a press roll resting tangentially on the suction rolls over a suction box extending the full distance between the two suction rolls. A second press roll rests tangentially on the second suction roll and on a pivot or on a smoothing press.—A. P.-C.

**Dandy Roll.** George N. Hoover, Jr., assignor to Cheney Bigelow Wire Works. U. S. pat. 1,960,154 (May 22, 1934).—The roll consists of two annular and frame members, to and between which is secured a cylindrical frame and wire mesh covering. It is mounted to rotate about a stationary shaft by means of trunnion rolls which engage the inner surface of the annular and members and which are supported on adjustable arms secured to the shaft. The whole assembly may be handled as a unit and may be inserted in the usual manner in the conventional supporting brackets commonly provided at opposite sides of the paper machine.—A. P.-C.

**Cylinder Paper Machine.** Harry W. Fieberts assignor to Fort Orange Paper Co. U. S. pat. 1,957,824 (May 8, 1934).—In order to ensure rapid circulation of the stock between the mixing chest and the paper machine vat without causing too rapid flow of stock past the cylinder mold, the inlet compartment of the vat is provided with an adjustable overflow partition, over which the excess of stock is returned to the mixing chest. The excess stock preferably is handled by the same pump that handles

the white water passing inside the cylinder mold.—A. P.-C.

**Supporting Means for Paper Rolls.** Philip D. Parsons assignor to Scott Paper Co. U. S. pat. 1,960,452 (May 29, 1934).—The invention provides a construction of a single-roll unwinding stand, whereby heavy rolls can be easily handled manually, raising them into proper position to engage the supporting mandrels, and one or both of the latter are adjustable (within limits) horizontally, both longitudinally and transversely of the axis of the roll.—A. P.-C.

**Rewinding Apparatus.** John P. Vaniten, assignor to Hoberg Paper and Fibre Co. U. S. pat. 1,960,605 (May 29, 1934).—A hollow tubular core shaft is used for winding toilet paper rolls. The shaft is provided with longitudinal slots and wheels are mounted in the shaft so that they project through the slots, thus facilitating removal of the wound rolls from the shaft and also engaging the core material during the winding operation to transmit to them the rotative motion of the shaft.—A. P.-C.

**Packing Material.** Morris Koppelnan assignor to Holed-Tite Packing Corp. U. S. pat. 1,958,050 (May 8, 1934).—The invention consists of a sheet of pulp formed with series of rib or furrows extending substantially longitudinally and transversely of the sheet, and having pyramidal or prismatic protuberances in the quadrilateral areas defined by intersecting furrows.—A. P.-C.

**Continuous Weighing Device for Paper Machines.** Floyd W. Adams assignor to The Barrett Co. U. S. pat. 1,960,428 (May 29, 1934).—After leaving the driers the sheet passes over two spaced stationary rolls. Between these rolls is a vertically moving floating roll which also supports the sheet. Each end of the floating roll is carried by a weighing beam supported on a knife edge and carrying two sliding weights, the first to balance the weight of the floating roll and the second of which is adjusted to a position corresponding to the gauge weight of the paper. A balancing element is suspended from the weighing beam in a suitable liquid container. Variations in weight of the sheet are compensated by suitably varying the level of liquid in the container so as to keep the weighing beam horizontal, and electrical means indicating the level of the liquid furnish an indication of the weight of the sheet.—A. P.-C.

**Process of Making Paper.** Charles W. Smith. U. S. pat. 1,957,913 (May 8, 1934).—The slice is provided at the stock-discharge end with a lip that is concave toward the apron. This is claimed to produce better felting by reducing the parallelism of the fibers in the direction of flow of the stock. The first drier is heated to a sufficiently high temperature to convert the water in the sheet into steam, the expansion of which gives the sheet a more open texture. The sheet is stripped from this dried by means of a creping doctor and is passed over the remaining drier in the usual way.—A. P.-C.

**Dandy Roll.** Earl E. Berry assignor to Beloit Iron Works. U. S. pat. 1,953,060 (April 3, 1934).—A dandy roll for wide fast machine can be made of smaller diameter than is usual at present by constructing it of a corrosion resistant material of high strength, *e.g.*, stainless steel. The roll consists of two circular end portions of relatively heavy section connected by a truss of two layers of stainless steel wire. The inner layer is formed of a series of wires having a general circumferential direction, but curved from side to side to form loops which are brought in contact at various points on the circumference and are welded at the points of contact. The outer layer consists of straight rods welded to the inner wires at their points of contact. A third layer of wire is wound spirally around the rods and the whole is covered with a wire cloth. The roll is open at both ends and is supported at each end on a belt passing around a table roll and two small pulleys, one on each side of the dandy, so that the latter is driven from the table roll as well as by contact with the machine wire.—A. P.-C.

**Process and Apparatus for Making Pulp Sheets for Viscose Manufacture.** David B. Davies. U. S. pat. 1,954,284 (April 10, 1934).—Either before or after passing through the driers, the sheet is passed between a screen-covered upper roll and bottom knurled roll so as to puncture or fracture the surface skin which develops on the sheet during its formation.—A. P.-C.

**Pulp Screen.** Nelson M. Knight. U. S. pat. 1,959,210 (May 15, 1934).—A horizontal, cylindrical, stationary screening surface is mounted inside a suitable casing. Passage of the stock through the screen is produced by means of a pair of cones, mounted inside the screen, with their apices at the center and their bases near the ends of the screen. The cones are oscillated back and forth in opposite directions.—A. P.-C.

**Method and Apparatus for Screening Fibers in Aqueous Suspension.** H. Wyatt Johnston. U. S. pat. 1,950,924 (March 13, 1934).—This patent covers the screen developed by Johnston at the Pulp and Paper Division of the Forest Products Laboratories of Canada, more particularly for the analytical separation of pulp into fractions of definite fiber length and also (it is suggested) for commercial screening of pulp. The principle of the instrument is based on causing the pulp suspension to flow over the screen surface in a non-sinuous manner so that the velocity of flow parallel or substantially parallel to the screen surface is considerably greater than the velocity of flow which takes place through the openings of the screen, *i.e.*, at right angles to the screen surface.—A. P.-C.

**Digesters Circulation System.** Gustaf L. M. Hellstrom. U. S. pat. 1,954,625 (April 10, 1934).—No screens are used at the intake of the pump. The latter is of the trash type, so that it can handle without clogging any chips that are carried by the circulating liquor.—A. P.-C.

### Miscellaneous

**The Period Required for Rewinding Paper Rolls.** W. Strahringer. Papier-Ztg. 59, No. 30:530-532 (April 14, 1934).—Nomographs are presented for predetermining the period required for rewinding paper rolls, when the diameter of the roll and the unwound length of the paper web in meters are known.—C. J. W.

**Sheet Formation Upon the Wire of the Fourdrinier Machine.** G. Cesconi. Industria carta 1, No. 3:108-110 (March, 1934).—An analysis is given of the phenomena which take place when the diluted pulp reaches the traveling wire, with special reference to the tendency of the fibers to orient themselves in the direction of the paper machine.—C. J. W.

**The Density of Paper.** G. Cesconi. Industria carta 1, No. 2:60-64 (Feb., 1934).—The author discusses the various factors which influence the density of a paper. A pulp containing a mixture of fibers of gradually decreasing length will result in the most compact sheet and attention should therefore be paid to this factor during the refining process.—C. J. W.

**New Paper Mill at Myllykoski.** Finnish Paper and Timber J. 16, No. 7:313-314, 316, 139: English section, 259-260 (April 12, 1934).—Description of a new newsprint mill with one paper machine, which started work in the summer of 1933.—C. J. W.

**Extensions at the Walkiakoski Paper Mill.** Finnish Paper and Timber J. 16, No. 7:319-320; English section, 260, 262 (April 12, 1934).—Description of new installa-

tions with special reference to a new Yankee kraft paper machine.—C. J. W.

**Recent Extensions at the Kymmene Mills.** G. Bonsdorff. Finnish Paper and Timber J. 16, No. 7:308, 310, 312-313: English section, 264, 266 (April 12, 1934).—New installations are described comprising, among other features, a Minton vacuum dryer for drying bleached pulp and two new pyrites burners for handling the ore from the Outukumpu mine.—C. J. W.

**Extension and Modernization of the Kaukas Sulphite Mill.** K. A. Wrede. Finnish Paper and Timber J. 16, No. 7:320-322; English section, 256-258 (April 12, 1934).—A description of the extensions carried out in the Kaukas sulphite mill, which produces specially bleached pulp for the manufacture of rayon.—C. J. W.

**Prevention of the Separation of Pitch from Paper Pulp.** V. I. Abramovich. Russian patent 31,754. Oct. 31, 1933. C. A. 28:3234. The separation of pitch from cellulose is prevented by adding kerosene as emulsifying agent without introducing into the pulp a solution of aluminum sulphate.—C. J. W.

**Residual Waters of Paper Factories.** R. Escat Serra. Quim. e ind. 10:333-338 (1933); C. A. 28:2902.—A general outline of the utilization and disposition of waste liquors of paper factories.—C. J. W.

**Progress in the Paper Industry.** A. Foulon. Wochbl Papier-fabr. 65, No. 11:186-188 (March 17, 1934).—The following inventions and improvements are discussed: the use of cyclic diether for the decomposition of wood, the recovery of cellulose from peat by the Bergmann process, three new processes for the bleaching of pulp, the sizing of carbonate filled paper with wax size, and recent methods for the treatment and use of the sulphite waste liquor.—J. F. O.

**Technical Meeting of a German Pulp and Paper Association at Kothen.** Wochbl Papier-fabr. 65, No. 8; 131-133 (Feb. 24, 1934).—The papers read at the meeting were, "Technical control of the sizing process," and "Photo projection analysis of swelling."—J. F. O.

**Saving Time by Means of Nomographs.** Ernst Oestreicher. Wochbl Papier-fabr. 65, No. 9; 146 (March 3, 1934).—Nomographs for the tearing length and for the length of paper in rolls are presented.—J. F. O.

**Sterilizing White Water Systems.** Howard M. Cyr and Otto Kress assignors to The New Jersey Zinc Co. U. S. pat. 1,954,800 (April 17, 1934).—From 1 to 10% (on the weight of fiber) of zinc sulphide pigment is added to the furnish.—A. P.-C.

**Process for the Production of Cellulose Material.** Zellstofffabrik Waldhof, Mannheim. Aust. pat. 136,521 (Sept. 15, 1933).—It has been found that a complete and lasting removal of the formation of the red coloring formed on unbleached and slightly bleached cellulose materials can be effected if the material is drenched with a non volatile salt of a heavy metal which can also be absorbed by the cellulose fiber. A zinc chloride solution, (one part to 1000 parts of dry cellulose) is used, and most suitably added at the beaters.—J. F. O.

### Cellulose and Lignin

**Effect of Dilute Nitric Acid Upon the Constants of Cotton Cellulose Fibers.** G. Korsheniovsky. Melliand Textilber. 15, No. 6:271-272; No. 7:312-313 (June, July, 1934).—The author attempts to prove that dilute nitric acid, especially at higher temperatures, has a deteriorating effect upon all constants of cellulose fibers. This influence is more marked the purer the cellulose; cotton is therefore more rapidly attacked than other fibers, such as wood, straw or reeds, where the incrustants act as a protective layer and react primarily with the acid. The author shows also that Kürschner's analytical method calling for a repeated nitric acid treatment of the cellulose samples is objectionable.—C. J. W.

**Theory of Mercerized Cellulose and Cellulose Hydrate.** R. Klaus. Kunstseide 16, No. 7:218-222 (July, 1934).—The author studies the relationship in the structure of native, mercerized and regenerated cellulose. He assumes that cellulose and its derivatives are chemically strictly identical and differ only in their physical properties, such as various colloidal properties, swelling, viscosity, etc. In the intermicellar reactions between cellulose and various reagents a displacement of primary valence chains is evident, especially from x-ray studies, which agrees very well with the alterations in properties of the cellulose derivatives.—C. J. W.

**Improving Quality in the Production of Sulphite Pulp.** O. P. Golova and A. M. Katz. Bumazhnaya Prom. 13, No. 3:27-40 (1934); C. A. 28:5234.—A study of the quality and yields of lignin obtained from bleached sulphite cellulose with sulphuric acid led to the following observations: Legnin isolated from bleached sulphite cellulose is not a homogeneous product and is different from lignin of the wood from which the pulp was made. The possibility of separation of pure lignin is refuted. The lignin value is influenced by the conditions of the preliminary extraction of cellulose and chiefly by the nature and the proportions of solvents in mixture. The best results are obtained by hydrolysis with 72% sulphuric acid; 78 per cent acid causes a partial carbonization of cellulose and 65 per cent acid an incomplete solution of cellulose with the resulting contamination of lignin and high values. The temperature of hydrolysis (10-30°) (until the product of conversion fails to give blue color reaction with zinc chloroiodide) has no effect on the yield of lignin. The diluted solution when boiled over 30 minutes gives high lignin values. The methoxyl content in the sulphite-cellulose lignin does not exceed 6 per cent and differs with the conditions of hydrolysis. The low content of methoxyl in the cellulose lignin may be thus explained: In the process of sulphite cooking practically all of the lignin is separated from the middle layers of wood, which are rich in methoxyl, while pulp retains a part of the lignin of the secondary layers of the cellular wall with a low content of methoxly. In respect to content of methoxly, cellulose lignin resembles the extractable resins and waxes and probably is genetically related to them. For every type of cellulose material a special method must be developed for the determination of lignin. The following method is given for lignin in bleached sulphite cellulose. A prepared sample (6 grams) is extracted with alcohol-benzene (1:1) as usual and the resin, wax and fatty matter are determined in the extraction liquid. Three grams of the dried extracted cellulose are placed in a 100-150 cc. glass jar with ground-in glass stopper, the whole is cooled to 10° in a thermostat and then mixed with 8 parts of 72 per cent sulphuric acid and carefully worked up 10-20 minutes with a broad glass rod, followed by occasional shaking of the jar until a control test gives no color reaction with zinc chloroiodide; the reaction mixture is transferred into a 300-400 cc. round-bottom flask containing 150 cc. water and diluted to 12-13 per cent sulphuric acid; the whole is then brought to a boil in 40-50 minutes and refluxed exactly 30 minutes, allowed to cool, filtered, washed with hot water until free from sulphuric acid and dextrin and dried at 105-110°. Any ash in lignin is determined by ignition. The determination can be accelerated by the addition of dimethylaniline to sulphuric acid. 25 references are given.—C. J. W.

# Forestry Expert Points Out Advantages To Paper Industry Offered By Alabama

Prof. M. L. Ware, head of the Horticulture and Forestry Departments of the Alabama Polytechnic Institute, writing in the *Times* of Florence, Ala., says that the availability of existing pulpwood supplies in Alabama and the area required to furnish a perpetual supply for future operations are two vital points which have been repeatedly raised in regard to the location in this state of mills for white paper manufacture. Neither point can be answered by exact figures; both points, however, permit of analysis and there is sufficient information available for a fair analysis to be made of each point.

In the final analysis any given pulp or paper mill must be assured that within a radius of 15 to 30 miles there is a stand of cordwood material sufficient to permit continuous operation until younger stands begin to reach cordwood size. Thereafter sufficient quantities of young growth must be in sight to insure a perpetual supply from the annual growth produced. It will require close search for specific locations which meet the requirements of a mill of known capacity.

Many suitable locations are to be found in this state. They, of course, must be located in each individual case. One can consider, however, the availability of supplies in Alabama as a whole. This concerns both present stands and available forest areas. To the paper manufacturer the one is of immediate concern, the other of future concern.

### Present Supply of Material

Considering first the present supply of material, let us see how Alabama stands. Since about 90 per cent. or more of the wood for pulping purposes consists of softwood species, hardwood stands may be dismissed from further consideration. Alabama has today 16.8 billion board feet of softwoods of saw-timber dimensions, the largest amount of saw-timber of any southern state. This amounts to approximately 3.3 billion cubic feet or approximately 37 million cords. Since saw-timber material has not been definitely shown to be suitable for white paper manufacture, we shall discard this class of timber from consideration, although recent experimental work indicates that much larger trees may be used than was thought possible two years ago. It stands, however, as a possible source of material but one which will not be included as available for pulpwood. It is interesting to note, however, that if two-thirds of this amount went into uses other than pulpwood that there would remain enough wood to furnish four mills of 500-tons-daily capacity for 17 years, even though no growth was made on the land occupied during that period.

### Potential Pulpwood

Dismissing wood of saw-timber size as of no value for pulpwood purposes, consideration may be next given to the stand of softwood species of cordwood size since this is the class offering an immediate source of pulpwood. Alabama has approximately 3.2 billion cubic feet or 35 million cords of wood in this class. Assuming again that two-thirds of this volume of wood will be used or saved for purposes other than pulpwood or that two-thirds will not be accessible to paper mills, the remaining one-third would supply four mills of 500-tons-daily capacity for 15 years. The land on which this timber stands, however, would not be idle; growth would be continuous on this area. As a matter of fact even at the present slow rate of growth, a rate one-third that which it should and could be if the area was intelligently handled, the growth of wood on the area now occupied by timber of cordwood size would supply the four mills with a perpetual source of pulpwood from approximately 63 per cent. of the growth which it makes. This area, may it be said, represents only one-seventh of the total forest area of the state, and only one-fourth of the re-stocking area of forest land in Alabama of cordwood size and smaller.

### Another Class of Forest Area

There is still another class of forest area not yet mentioned. This is the area containing wood below cordwood size. It is this area which is of vital importance for future supplies of cordwood material. This area in Alabama is 9.8 million acres, one million of which is non-restocking. This means that there is an area of 8.8 million acres of restocking forest land. Of this amount probably one-third is in hardwood species. This should leave approximately six million acres of land of softwoods below the cordwood size. What annual growth should be expected from this area?

It is impossible to give a figure for this amount because the average rate of growth per acre per year ranges from approximately one-fourth cord per acre per year for all ages and classes of timber on all classes of forest land for the whole South to 1.8 cords per acre per year on full stands of slash pine on average sites.

### Average Growth Per Acre

The most conservative growth factor is probably the one which represents the average growth per acre per year for the whole South on all ages and classes of timber on productive forest land, since this is the type of area being considered. This figure is approximately 36 cubic feet or 4 cords per acre per year. A 20-year-old, fully-stocked stand of slash pine on an average site and intelligently handled, can produce three times this growth. If, however, .4 cords per acre year is used as the growth factor, and if two-thirds of the growth on this area classed as restocking forest land under cordwood size, is used for purposes other than pulpwood, or is not accessible to pulp mills, then there will be sufficient volume of cordwood material produced each year after 10 to 12 years to supply the four mills at full capacity indefinitely, assuming that intelligence enough is used in the management of the area to insure future restocking. If a type of crude forestry management should be practiced then the volume of growth could be raised 50 per cent. Without changing the area or increasing the proportion of the annual volume of growth going into pulpwood, the number of mills might be increased from four to six each of 500 tons daily capacity.

### The Whole Picture

If our consideration is extended to include a complete picture of all forest lands, including all types, both hardwood and softwoods, and all uses of wood—for wood must still be supplied for lumber mills, fence posts, crossties, firewood, etc., and hardwood material and saw-timber trees will contribute their part—we have this picture. The volume of timber now standing in Alabama on saw-timber and

cordwood areas totals 6.5 billion cubic feet. If three-fourths of this amount finds its way into uses other than pulpwood, then six mills each of 500-tons-daily capacity could operate for 16 years on the remaining amount. The annual growth made on the saw-timber areas (other than that on which virgin timber stands), cordwood areas, and re-stocking areas should approximate 660 million cubic feet (6.2 million cords). If four-fifths of this growth should be assigned to uses other than pulpwood, then six mills of 500-tons-daily capacity could operate perpetually on the remaining fifth. In terms of the total pulpwood requirements for the United States, including that now obtained from domestic and foreign sources and that required for the soda, sulphite, sulphate and mechanical processes, this would mean that the six mills could supply one-twelfth of all the puldwood required by this nation or they could supply pulpwood for one-fourth of the news-printing reuirements for the nation by only drawing on one-fifth of the annual timber growth of the state.

**Selective Areas in Alabama**

One might quite justly criticize this analysis as theoretical since the whole area of the state has been included as a possible source of wood, whereas it is known that only wood within a narrow radius of a mile could be considered available. This is correct. Let it be remembered, however, that there are selected areas in Alabama where the volume of timber per acre is four to five times that of Alabama as a whole and where the rate of growth is three to four times as rapid as that taken as a growth factor in these calculations. Again it should be emphasized that in the final analysis, a given mill is interested in a selected site and not in a general site. In this case figures which represent the volume of wood and the rate of growth for that area apply and not those for the state as a whole. An analysis similar to this is being prepared of the factors involved in the selection of a specific site for a mill.

# Felt Cleaning Suction Roll

**By Charles E. Ellis[1]**

The full width of the felt is continuously and uniformly washed and dried by the Downingtown Suction Felt Roll without damaging, wearing or stretching the felt. As seen in Fig. 1, the shower is installed close to the roll, thus the water thoroughly cleanses the sheet side of the felt and is immediately withdrawn by the Felt Cleaning Suction Roll, before it has a chance to soak clear through the felt. The remaining holes in the suction area therefore draw more air than water thus producing a drying effect on the felt. The Downingtown Suction Felt Roll consists of a centrifugally cast bronze shell having drilled holes arranged spirally, these holes being countersunk on the outside of the shell. The shell revolves around a fixed cast iron suction box equipped with spring supported packing strips of special frictionless material. No drive is required, for the shell revolves around the suction box in anti-friction bearings and is driven by the felt in which it is operating. Adjustable deckles are provided at each end of the roll; also a flexible suction pipe with flange connections. In many instances, the same vacuum pump formerly used for the flat boxes has been entirely satisfactory.

[1] Vice-President, Downingtown Mfg. Co., Downingtown, Pa.

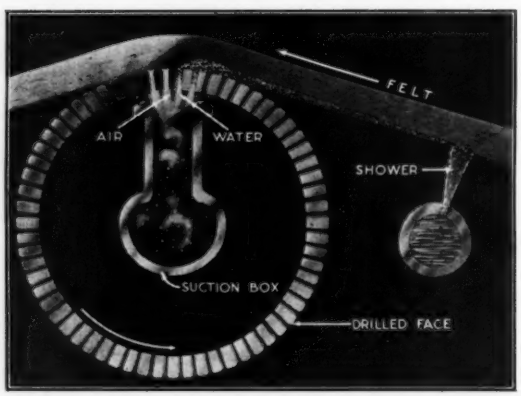



FIG. 1
**The operating principle of the Downingtown felt cleaning suction roll.**

Felt wear and felt stretch, as compared to the use of flat suction boxes is practically eliminated, for the Downingtown Suction Felt Roll requires only about 1/10 of the power consumed by the drag of the felt over flat boxes and further, the felt fibers are neither drawn nor compressed.

Downingtown Suction Felt Rolls are made in 10 inch, 12 inch and 14 inch diameters to suit the width of the machine on which they are to operate. The suction felt roll can be installed with the base bolted in any position, and since the roll requires approximately the same amount of space as a plain felt roll, mills can now clean their felts where it will do the most good not merely where they have room for the necessary equipment. Downingtown Felt Cleaning Suction Rolls are in use on pick-up felts, top felts and press felts on both cylinder and fourdrinier machines. Performance records on various types of machines show felt savings ranging from 50 per cent to 300 per cent. Many shutdowns for roping and washing are eliminated.

Continuous, uniform felt cleaning permits high grade paper and board machines to operate at full speed right along, without slowing back as the felt fills up or shutting down to wash up during operation.

## Waste Paper Trade Complaints Committee

The National Recovery Administration announces that membership and procedure of the Waste Paper Trade Practice Complaints Committee has been approved as follows: David Charak, Federal Paper Stocks Company, Inc., St. Louis; Samuel I. Hershman, of I. Hershman & Company, Inc., 135 Minor street, New Haven, Conn.; Paul J. White, Great Eastern Packing and Paper Stock Corporation, New York; E. H. Silberman, of Silberman Paper Company, Cleveland; Harry Bailey, The Hemingway Company, Philadelphia; Harold Schilling, of the U. S. Paper Supply Company, Chicago; Counsel, Stanley Osserman, 505 Fifth avenue, New York; secretary, Charles M. Haskins, Times Building, New York; administration member, Dr. N. I. Stone.

# IMPORTS OF PAPER AND PAPER STOCK

## NEW YORK, BOSTON, PHILADELPHIA AND OTHER PORTS

### NEW YORK IMPORTS

WEEK ENDING OCTOBER 27, 1934

CIGARETTE PAPER

Champagne Paper Corp., Pr. Harding, Havre, 336 cs.; American Tobacco Co., Pr. Harding, Havre, 80 cs.

WALL PAPER

S. K. Lonegren, Gripsholm, Gothenburg, 2 cs.

NEWS PRINT

Il Progresso Italo Americano, N. Maersk, Three Rivers, P. Q., 76 rolls; American Jewish Publishing Corp., N. Maersk, Three Rivers, P. Q., 499 rolls; —— N. Maersk, Port Alfred, 1135 rolls; H. G. Craig Co., Inc., Bonnacona, 2, Montreal, 581 rolls; ——, Deutschland, Hamburg, 44 rolls; Perkins Goodwin & Co., Deutschland, Hamburg, 446 rolls; Jay Madden Corp., Pr. Harding, Hamburg, 144 rolls.

WRAPPING PAPER

Blauvelt Wiley Paper Manfg. Co., Gripsholm, Gothenburg, 18 rolls.

KRAFT PAPER

Walker Goulard Plehn Co., Pr. Harding, Hamburg, 585 rolls.

PACKING PAPER

Scharff Bros., Inc., Black Falcon, Rotterdam, 4 cs.

DRAWING PAPER

H. Reeve Angel & Co., Inc., Amer. Farmer, London, 2 cs.

FILTER PAPER

H. Reeve Angel & Co., Inc., Amer. Farmer, London, 5 cs.

SURFACE COATED PAPER

Gevaert Co. of America, Nubian, Antwerp, 38 cs.; L. A. Consmiller, Europa, Bremen, 6 cs.

BARYTA COATED PAPER

Globe Shipping Co., Europa, Bremen, 5 cs.

PHOTO PAPER

American Express Co., Deutschland, Hamburg, 81 cs.

DECALCOMANIAS

Sellers Transportation Co., Europa, Bremen, 4 cs.; Phoenix Shipping Co., Europa, Bremen, 2 cs.

TRANSFER PAPER

Phoenix Shipping Co., Deutschland, Hamburg, 10 cs.

TISSUE PAPER

——, Pr. Adams, Marseilles, 6 cs.; F. C. Strype, Port Campbell, Liverpool, 4 cs.; Jay Madden Corp., Deutschland, Hamburg, 13 bbls.

COLORED PAPER

Borden Riley Paper Co., Nubian, Antwerp, 2 cs.; International F'd'g Co., Deutschland, Hamburg, 3 cs.

LITHO PAPER

General Printing Ink Corp., Asuka Maru, Hong Kong, 10 cs.

WRITING PAPER

Globe Shipping Co., Pr. Harding, Havre, 2 cs.

CARD BOARD

M. Levy, Pr. Harding, Havre, 3 cs.

MISCELLANEOUS PAPER

Corn Exchange Bank Trust Co., Nagara Maru, Osaka, 4 cs.; Japan Paper Co., Nagara Maru, Kobe, 6 cs.; Iwai & Co., Nagara Maru, Kobe, 3 cs.; National City Bank, Nagara Maru, Yokohama, 4 cs.; Keller Dorian Paper Co., Pr. Adams, Marseilles, 5 cs.; ——, Gripsholm, Gothenburg, 48 bbls.; The Borregaard Co., Inc., Gripsholm, Gothenburg, 98 rolls, 17 bls.; Steiner Paper Corp., Gripsholm, Gothenburg, 8 bls.; Kraemer & Co., Gripsholm, Gothenburg, 321 bls.; E. H. Sargent & Co., Gripsholm, Gothenburg, 2 cs.

RAGS, BAGGINGS, ETC.

——, American Importer, Manchester, 14 bls rags; Amtorg Trading Corp., J. James, Leningrad, 2295 bls rags; T. D. Downing & Co., Transylvania, Glasgow, 63 bls bagging; Darmstadt Scott & Courtney, Lehigh, Manchester, 82 bls rags; A. W. Fenton, Inc., Lehigh, Manchester, 18 bls bagging; Darmstadt Scott & Courtney, Black Tern, Antwerp, 210 bls. bagging; N. Schwab & Son, Black Tern, Antwerp, 65 bls. cotton waste; Royal Manfg. Co., Black Tern, Antwerp, 24 bls. cotton waste; E. J. Keller Co., Inc., Black Tern, ——, 25 bls. rags; ——, Black Falcon, Rotterdam, 107 bls. cotton waste; J. J. Ryan & Son, Black Falcon, Rotterdam, 109 bls. cotton waste; Chase National Bank, Amer. Farmer, London, 27 bls. paper stock; Royal Manfg. Co., Ary Lensen, Antwerp, 331 bls. cotton waste; E. J. Keller Co., Inc., Pr. Adams ——, 122 bls,. rags; J. Cohen Son Co., Port Campbell, Liverpool, 23 bls. paper stock; D. M. Hicks Inc., Nubian, Antwerp, 37 bls. paper stock; Castle & Overton, Inc., Trentino, Hull, 41 bls. new cuttings; Manufacturers Trust Co., Deutschland, Hamburg, 396 bls. cotton waste.

GLUE STOCK

——, Deutschland, Hamburg, 250 bags bone glue; ——, Deutschland, Hamburg, 10 bags hide glue.

OLD ROPE

Chase National Bank, Ary Lensen, Rotterdam, 51 coils; Banco Coml. Italiane Trust Co., Ary Lensen, Rotterdam, 99 coils.

CHINA CLAY

Paper Makers Importing Co., Putten, Fowey, 1472 tons, 14 cwt.

WOOD PULP

Castle & Overton, Inc., Deutschland, Hamburg, 870 bls. wood pulp, 174 tons; Bank of N. Y. Trust Co., Deutschland, Hamburg, 2800 bls. wood pulp, 560 tons; Price & Pierce, Ltd., Gripsholm, Gothenburg, 325 bls. wood pulp, 300 bls. sulphite; J. Andersen & Co., Gripsholm, Gothenburg, 375 bls. sulphite; Bankers Trust Co., Gripsholm, Gothenburg, 127 bls. sulphate; Gottesman & Co., Inc., Minnequa, Gdynia, 1317 bls. wood pulp, 208 tons; Bulkley Dunton & Co., Lagaholm, ——, 2625 bls. wood pulp.

## PORTLAND IMPORTS

WEEK ENDING OCTOBER 27, 1934

Gottesman & Co., Inc., Bockenheim, Sweden, 8590 bls. wood pulp Gottesman & Co., Inc., Kolsnaren, Sweden, 3750 bls. wood pulp; Gottesman & Co., Inc., Minnequa, Gdynia, 2644 bls. wood pulp.

## BOSTON IMPORTS

WEEK ENDING OCTOBER 27, 1934

Crocker Burbank Co., Amer. Farmer, London, 298 bls. waste paper; American Express Co., Amer. Farmer, London, 49 bls. waste paper; Bulkley Dunton & Co., Bockenheim, ——, 1625 bls. wood pulp; Gottesman & Co., Inc., Kolsnaren, Sweden, 1000 bls. wood pulp.

## PHILADELPHIA IMPORTS

WEEK ENDING OCTOBER 27, 1934

F. Stern, Ary Lensen, London, 4 bls. rags; Royal Manfg. Co., Ary Lensen, Antwerp, 111 bls. cotton waste; Paper Makers Importing Co., Putten, Fowey, 501 tons, 5 cwt. china clay; J. W. Higman Co., Inc., Putten, Fowey, 158 tons, 16 cwt. china clay; Gottesman & Co., Inc., Hallaren, Finland, 500 bls. wood pulp; Gottesman & Co., Inc., Etna, Sweden, 500 bls. wood pulp.

## BALTIMORE IMPORTS

WEEK ENDING OCTOBER 27, 1934

W. H. Masson, Black Tern, Antwerp, 65 coils old rope; Bulkley Dunton & Co., City of Norfolk, ——, 1300 bls. wood pulp; Bulkley Dunton & Co., Breedyk, ——, 1080 bls. wood pulp.

## NORFOLK IMPORTS

WEEK ENDING OCTOBER 27, 1934

E. J. Keller Co., Inc., Black Tern, ——, 230 bls. flax waste; Paper Makers Importing Co., Putten, Fowey, 402 tons, 15 cwt. china clay; J. W. Higman Co., Inc., Putten, Fowey, 293 tons, 1 cwt. china clay.

## More Paper Base Stock Exported

The United States has enjoyed a growing export trade in paper base stocks during recent years. Shipments in this line during the month of August totaled $1,046,439 in value, an increase of 16 per cent over the preceding month and of 300 per cent over the corresponding month last year. The bulk of these shipments consisted of sulphite pulp, 16,513 tons of this product being exported during August as against 4,720 tons of rags and other waste and 219 tons of other wood pulps.

## A. M. Collins Mfg. Co. Brings Suit

A suit has been filed in the United States District Court for the District of New Jersey, by the A. M. Collins Manufacturing Company, of Philadelphia, against Processed Papers, Inc., of Camden, N. J.

Infringement is claimed on U. S. Letters Patent, No. 1,403,765, for ornamental paper and the process of making same, held by the Collins Company and under which many of their nationally distributed coated cover and coated book paper lines are manufactured.

The Collins papers, protected by the patent, include long-established lines recognized and sold under the style names of Old Spanish, Castilian, Bookcraft, Librarian and Wovetone Cover papers and Laidtone, Wovetone, Parchmentone and Skytone Coated papers.

The suit filed by the A. M. Collins Manufacturing Company on September 12, 1934, charges infringement by Processed Papers, Inc., in the manufacture and sale, or offering for sale of cover paper which it is claimed is processed in a similar manner to the cover paper styled Collins "Old Spanish" Cover.

It is stated that as the sale of the infringing product by the trade would also be an infringement, the Collins Company are issuing notice of their intention to protect their patent against all infringements.

## Quality of Paper Paramount Importance to Egyptian Cigarette Manufacturers

WASHINGTON, D. C., October 31, 1934.—Manufacturers of cigarettes in Egypt give as much consideration to the quality of the paper they use as to the blending of the tobaccos, according to Commercial Attache C. E. Dickerson, Jr., Cairo, in a report to the Commerce Department, Every Egyptian cigarette maker, he points out, is at the same time a specialist in the choice of cigarette paper.

As a general rule, the report states, the paper preferred for cigarettes in Egypt is not very thin, manufacturers having found that thin paper becomes discolored when it remains for a long time in contact with the tobacco and also that it is easily broken in the process of manufacture.

Egyptian cigarette manufacturers obtain the bulk of their paper requirements from Italy, with France ranking second as a supplier and smaller quantities being secured from England and Austria.

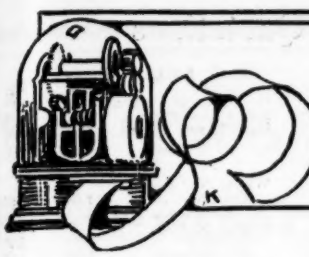
That Egypt's imports of cigarette paper reach a substantial volume is shown by the fact that last year they amounted to 1,042,000 pounds, valued at approximately $255,000.

Because practically all of the cigarette machines used in Egypt are of American manufacture, for which paper in rolls must be used, most of the cigarette paper imported is in this form, the report points out.

## Racquette River Entertains Paper Men

[FROM OUR REGULAR CORRESPONDENT]

POTSDAM, N. Y., October 29, 1934—About forty officials of prominent paper mills are the guests of the Racquette River Paper Company a the Granshue tract in the Adirondacks where hunting and recreational advantages are being enjoyed. Among those at the lodge are Sidney Wilson, president of the American Pulp and Paper Association, and Frederick McNichols, of the New York branch of the Racquette River Paper Company. The gathering has taken place yearly for several fall seasons and business topics generally come in for discussion when the executives are not enjoying the excellent hunting facilities. A complete display of the products of the Racquette River Paper Company is being shown.



# LATEST MARKET REVIEW

## New York Market Review

Office of the PAPER TRADE JOURNAL,
Wednesday, October 31, 1934.

Conditions in the local paper market are improving slowly. Demand for the various standard grades of paper is more active and the outlook for the closing months of the year is fairly promising. Sales forces of the leading paper houses generally express optimism. The price situation continues unchanged.

The position of the newsprint paper market is stronger. Agitation for higher prices is growing, despite the opposition of the newspaper publishers, who fail to take into account rising costs of operation and wages. Production in Canada, Newfoundland and the United States is being maintained in sufficient volume to take care of current needs.

Business in the fine paper market is slightly better. Book, cover and writing papers are moving in fairly good volume. Prices are steady. Tissues are in seasonal request. The coarse paper market is more buoyant, while specialties are holding up very well. Demand for the various grades of paper board is brisk.

### Mechanical Pulp

The ground wood pulp market is rather quiet. Manufacturing operations in North America and abroad are practically keyed to consumption, with the result that the industry is in a sound statistical position for the time of year. Prices of both domestic and imported mechanical pulp are generally holding to schedule without difficulty.

### Chemical Pulp

Steadiness prevails in the chemical pulp market. No further price changes have been reported since the recent decline in domestic kraft pulp. Domestic and foreign bleached sulphite is still quoted at from $2.75 to $2.85 per 100 pounds, according to grade. All prime easy bleaching is selling at $2.25 per 100 pounds, on dock, Atlantic ports.

### Old Rope and Bagging

The old rope market is arousing more interest from the paper mills. Demand for domestic and foreign old manila rope is broader. Small mixed rope is moving in fairly good volume. Old rope prices are steady. The bagging market is displaying a stronger undertone. Scrap bagging is more active. Gunny and roofing bagging are steady.

### Rags

Sentiment is improving in the domestic rag market. Demand for new cotton rags is fairly persistent. No. 1 white shirt cuttings and fancy shirt cuttings are moving freely into consumption. Roofing grades are moderately active. The position of the foreign rag market is uncertain, due to the foreign exchange situation.

### Waste Paper

The paper stock market is irregular. Board mill demand for the lower grades is light. The little business transacted, however, is reported to have been booked at the recently established minimum prices. The higher grades of waste paper are firmer, especially hard and soft white shavings and hard white envelope cuttings.

### Twine

Demand for the various grades of twine is gradually expanding and should prove quite lively from now until the end of the year, at least. Supplies are moving into consumption in good volume. Prices are generally holding to previously quoted levels and reports of concessions are infrequent.

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## NEWSPRINT MORE COMPLICATED

*(Continued from page 15)*

their plight lies within the power and opportunity of the leaders of the industry, itself. If they still find it impossible to cooperate, the next step, it is held, would be for the Governments of Ontario and Quebec to take action. If they also fail and appeal to the Federal Government on the ground that the matter has become one of urgent national concern, then—but not till than—the Ottawa ministry may feel constrained to act.

### Higher Volume, Lower Value

The Dominion Bureau of Statistics reports that exports of newsprint in September amounted to 3,815,886 cwt., valued at $6,569,041, as compared with 3,556,114 cwt., valued at $6,612,258 in September, 1933. Of this the United States took 2,950,283 cwt., valued at $5,151,432, and next best customers were Australia at $632,000, Japan $261,000, United Kingdom $161,000, and Argentina $130,000.

The export of wood pulp and screenings in September was 1,024,471 cwt. of the value of $2,123,673 compared with 1,261,667 at $3,372,807 a year ago. The pulpwood export was $1,037,350 compared with $792,168.

### Low Water Affects Pulpwood Drive

From Saint John, N. B., it is reported that low water in the Saint John river is interfering with the plans of the Port Royal Pulp and Paper Company for bringing down its 35,000 cords of pulpwood. As a consequence about 17,000 cords are being piled above the high water mark, and they will be brought down in the spring.

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## Thermal Insulation

The National Bureau of Standards has prepared Letter Circular No. 421, Thermal Insulation, as a convenient means of replying to the numerous inquiries on this subject. This contains references to literature issued by the Bureau and elsewhere on the subjects insulating materials, heat losses from buildings, domestic heating plants, refrigerator insulation, condensation of moisture, steam pipe and high-temperature insulation. Copies may be obtained from the Bureau free of charge.

# Miscellaneous Markets

Office of the PAPER TRADE JOURNAL,
Wednesday, October 31, 1934.

BLANC FIXE.—The position of the blanc fixe market is practically unchanged. Prices are holding to schedule. The pulp is quoted at from $42.50 to $45 per ton, in bulk; while the powder is selling at from 3½ cents to 3¾ cents per pound, in barrels, at works.

BLEACHING POWDER.—Steadiness prevails in the bleaching powder market. Contract shipments are moving in fairly good volume for the season. Prices remain unchanged. Bleaching powder is quoted at from $1.90 to $2.15 per 100 pounds, in drums, at works.

CASEIN.—The casein market continues quiet. Domestic standard ground is quoted at 10 cents and finely ground at 11 cents per pound; while Argentine standard ground is offered at 14 cents and finely ground at 14½ cents per pound, all in bags, car lot quantities.

CAUSTIC SODA.—Demand for caustic soda is moderately active. The contract movement is normal. Prices are firm. Solid caustic soda is quoted at from $2.60 to $3.10; while the flake and ground are selling at from $3 to $3.05 per 100 pounds, in large drums, at works.

CHINA CLAY.—The china clay market continues fairly active. Prices are generally well sustained. Imported china clay is quoted at from $13.50 to $21 per ton, ship side; while domestic paper making clay is selling at from $6.50 to $12 per ton, at works.

CHLORINE.—Most of the business transacted in the chlorine market during the week was along routine lines. Prices are steady and unchanged. Chlorine is quoted at from $2 to $2.40 per 100 pounds, in tanks, or multi-unit cars, in ton lots, or over, at works.

ROSIN.—The rosin market is firm. Paper making gum rosin is quoted at $4.30 and FF wood rosin at $4.30 per 280 pounds, gross weight, in barrels, at southern shipping points. Seventy per cent rosin size is selling at $2.54 per 100 pounds, in tank cars, at works.

SALT CAKE.—Paper mill demand for salt cake is fairly persistent. Prices are unchanged. Salt cake is quoted at from $12 to $14, and chrome salt cake at from $12 to $12.50 per ton, at works. Imported salt cake is selling at from $12 to $12.50 per ton, at works.

SODA ASH.—The soda ash market is marking time. Producers are booking a fair volume of contracts for next year at unchanged price levels. Quotations on soda ash, in car lots, at works, per 100 pounds, are as follows: in bulk, $1.10; in bags, $1.40; and in barrels, $1.50.

STARCH.—No radical changes transpired in the starch market. Quotations are holding to previously reported levels, in most instances. Special paper making starch is selling at $3.47 per 100 pounds, in bags; and at $3.74 per 100 pounds, in barrels, at works.

SULPHATE OF ALUMINA.—The sulphate of alumina market is displaying strength. Prices are holding to schedule. Commercial grades are quoted at from $1.35 to $1.50; while iron free is selling at from $1.90 to $2.05 per 100 pounds, in barrels, at works.

SULPHUR.—The sulphur market is steady. Sulphur is quoted at from $18 per long ton on orders of 1,000 tons, or over, on yearly contracts; and at $20 per ton on any smaller quantity over that period. On spot and nearby car loads the quotation is $21 per ton.

TALC.—Conditions in the talc market are fairly satisfactory. Prices are holding to formerly quoted levels. Domestic talc is selling at from $16 to $18 per ton, in bulk, at eastern mines; while imported talc is selling at from $23 to $30 per ton, on dock.

# Market Quotations

## Paper

(F. o. b. Mill)

| | | | |
|---|---|---|---|
| Ledgers | 6.50 | @ | — |
| Bonds | 6.00 | @ | — |
| Index | 6.00 | @ | — |
| Writings— | | | |
| Extra Superfine | 6.50 | @ | — |
| Superfine | 6.25 | @ | — |
| Tub sized | 5.75 | @ | — |
| Engine sized | 5.50 | @ | — |
| Book, Cased— | | | |
| S. & S. C. | 5.35 | @ | 5.75 |
| S. & S. C. Litho. | 5.60 | @ | 6.00 |
| M. F. | 5.10 | @ | 5.50 |
| Coated and Enamel | 5.90 | @ | 6.55 |
| Coated Litho | 5.90 | @ | 6.55 |
| Tissues—Per Ream— | | | |
| White No. 1 | .82½ | @ | .85 |
| White No. 2 | .67½ | @ | — |
| Anti-Tarnish M. G. only | 1.00 | @ | — |
| Colored | .85 | @ | — |
| Kraft | .70 | @ | — |
| Manila | .67½ | @ | .70 |
| Manila— | | | |
| No. 1 Jute | 9.00 | @ | 9.25 |
| No. 2 Jute | 7.75 | @ | 8.50 |
| No. 1 Wood | 4.00 | @ | 5.25 |
| No. 2 Wood | 3.50 | @ | 4.00 |
| Butchers | 4.00 | @ | 4.50 |
| Fibre Papers— | | | |
| No. 1 Fibre | 4.25 | @ | 5.50 |
| No. 2 Fibre | 4.00 | @ | 4.75 |
| Common Bogus | 1.50 | @ | 3.00 |
| Screenings | 2.50 | @ | 3.50 |
| Glassine— | | | |
| Bleached | .11 | @ | — |
| Unbleached | .09 | @ | — |

(The following Quotations are Delivered New York)

| | | | |
|---|---|---|---|
| News, per ton— | | | |
| Roll, contract | 40.00 | @ | — |
| Rolls, spot | 40.00 | @ | — |
| Sheets | 45.00 | @ | — |
| Kraft— | | | |
| No. 1 Domestic | 4.75 | @ | 5.00 |
| No. 2 Domestic | 3.87½ | @ | — |
| Southern | 3.87½ | @ | — |
| Boards—per ton— | | | |
| News | 40.00 | @ | 45.00 |
| Chip | 37.50 | @ | 40.00 |
| Sgl. Mla. Ll. Chip | 47.50 | @ | 52.50 |
| Jute Lined Chip | 47.50 | @ | 52.00 |
| White Patent Coated | 60.00 | @ | 65.00 |
| Binders Boards | 67.00 | @ | 75.00 |

## Mechanical Pulp

(On Dock, Atlantic Ports)

| | | | |
|---|---|---|---|
| No. 1 Imported— | | | |
| Moist | 22.00 | @ | 24.00 |
| Dry | 23.00 | @ | 24.00 |

(F.o.b. Mill)

| | | | |
|---|---|---|---|
| No. 1 Domestic and Canadian | 22.00 | @ | 26.00 |

## Chemical Pulp

(On Dock, Atlantic, Gulf and West Coast Ports)

| | | | |
|---|---|---|---|
| Bleached Sulphite (Domestic and Foreign)— | | | |
| Division 1 | 2.35 | @ | —* |
| Division 2 | 2.80 | @ | —* |
| Division 3 | 2.75 | @ | —* |
| Prime Qualities— | | | |
| Class 1. All Prime Easy Bleaching | 2.25 | @ | —* |
| Other Than Easy Bleaching— | | | |
| Class 2. Higher Than Standard | 2.20 | @ | —* |
| Class 3. Standard | 2.15 | @ | —* |
| Class 4, Lower than Standard | 2.10 | @ | — |

(On Dock, Atlantic Ports)

| | | | |
|---|---|---|---|
| Kraft No. 1 | 1.70 | @ | 1.80 |
| Kraft No. 2 | 1.55 | @ | 1.65 |

(F.o.b. Pulp Mill)

| | | | |
|---|---|---|---|
| Kraft Domestic | 1.60 | @ | 2.25 |

(Delivered)

| | | | |
|---|---|---|---|
| Soda Bleached | 2.50 | @ | — |

*Add 60 Cents per short ton, dock charges, for Albany; $2.00 for Lake Ports East and $3.00 for Lake Ports West of Mackinac Straits.

## Domestic Rags

New Rags

(Prices to Mill f. o. b. N. Y.)

| | | | |
|---|---|---|---|
| Shirt Cuttings— | | | |
| New White, No. 1 | 5.75 | @ | 6.00 |
| Silesias No. 1 | 3.75 | @ | 4.00 |
| New Unbleached | 6.25 | @ | 6.50 |
| New Soft Blacks | 3.00 | @ | 3.25 |
| Blue Overall | 3.50 | @ | 3.75 |
| Fancy | 2.50 | @ | 2.75 |
| Washables | 1.75 | @ | 2.00 |
| Mixed Khaki Cuttings | 3.00 | @ | 3.25 |
| O. D. Khaki Cuttings | 3.75 | @ | 4.00 |
| Men's Corduroy | 1.50 | @ | 1.75 |
| New Mixed Blacks | 2.50 | @ | 2.75 |

Old Rags

| | | | |
|---|---|---|---|
| White, No. 1— | | | |
| Repacked | 3.00 | @ | 3.50 |
| Miscellaneous | 2.75 | @ | 3.25 |
| White, No. 2— | | | |
| Repacked | 1.75 | @ | 2.25 |
| Miscellaneous | 1.50 | @ | 1.75 |
| Thirds and Blues— | | | |
| Repacked | 1.50 | @ | 1.75 |
| Miscellaneous | 1.25 | @ | 1.50 |
| Black Stockings | 2.50 | @ | 3.00 |
| Roofing Rags— | | | |
| No. 1 | 1.10 | @ | 1.25 |
| No. 2 | .80 | @ | .85 |
| No. 3 | .70 | @ | .75 |
| No. 4 | .65 | @ | .70 |
| No. 5A | .60 | @ | .65 |

## Foreign Rags

New Rags

| | | | |
|---|---|---|---|
| New Dark Cuttings | 1.60 | @ | 1.70 |
| New Mixed Cuttings | 1.75 | @ | 1.85 |
| New Light Silesias | 3.75 | @ | 4.00 |
| Light Flannelettes | 3.75 | @ | 4.00 |
| Unbleached Cuttings | 6.50 | @ | 6.75 |
| New White Cuttings | 6.50 | @ | 6.75 |
| New Light Oxfords | 3.25 | @ | 3.50 |
| New Light Prints | 2.75 | @ | 3.00 |

Old Rags

| | | | |
|---|---|---|---|
| No. 1 White Linens | 7.50 | @ | 8.00 |
| No. 2 White Linens | 6.50 | @ | 7.00 |
| No. 3 White Linens | 4.50 | @ | 5.00 |
| No. 4 White Linens | 2.25 | @ | 2.50 |
| No. 1 White Cotton | 4.25 | @ | 4.75 |
| No. 2 White Cotton | 3.25 | @ | 3.75 |
| No. 3 White Cotton | 2.50 | @ | 2.75 |
| No. 4 White Cotton | 1.90 | @ | 2.15 |
| Extra Light Prints | 2.00 | @ | 2.25 |
| Ord. Light Prints | 1.75 | @ | 1.85 |
| Med. Light Prints | 1.55 | @ | 1.65 |
| Dutch Blue Cottons | 1.75 | @ | 1.85 |
| French Blue Linens | 2.30 | @ | 2.40 |
| German Blue Linens | 2.15 | @ | 2.25 |
| German Blue Cottons | 1.70 | @ | 1.80 |
| Checks and Blues | 1.30 | @ | 1.40 |
| Linsey Garments | 1.40 | @ | 1.60 |
| Dark Cottons | 1.00 | @ | 1.10 |
| Old Shopperies | .95 | @ | 1.00 |
| New Shopperies | .90 | @ | 1.00 |
| French Blues | 1.70 | @ | 1.80 |

## Old Rope and Bagging

(Prices to Mill f. o. b. N. Y.)

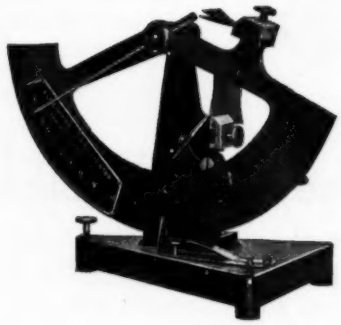
| | | | |
|---|---|---|---|
| Gunny No. 1— | | | |
| Foreign | 1.50 | @ | 1.60 |
| Domestic | 1.40 | @ | 1.50 |
| Wool Tares, light | 1.20 | @ | 1.30 |
| Wool Tares, heavy | 1.20 | @ | 1.30 |
| Bright Bagging | 1.15 | @ | 1.25 |
| Manila Rope— | | | |
| Foreign | 1.85 | @ | 2.00 |
| Domestic | 1.75 | @ | 2.00 |
| Small Mixed Rope | 1.10 | @ | 1.35 |
| New Burlap Cut | 2.00 | @ | 2.25 |
| Hessian Jute Threads— | | | |
| Foreign | 2.60 | @ | 2.75 |
| Domestic | 2.80 | @ | 3.00 |

## Old Waste Papers

(F. o. b. New York)

| | | | |
|---|---|---|---|
| Shavings— | | | |
| White Envelope Cuttings | 2.70 | @ | 2.80 |
| Ordinary Hard White No. 1 | 2.15 | @ | 2.25 |
| Hard White No. 2 | 1.95 | @ | 2.05 |
| Soft White No. 1 | 1.85 | @ | 1.95 |
| Flat Stock— | | | |
| Stitchless | .80 | @ | .90 |
| Over issue Mag. | .80 | @ | .90 |
| Solid Flat Book | .65 | @ | .75 |
| Crumpled No. 1 | .60 | @ | .65 |
| Solid Book Ledger | 1.50 | @ | 1.65 |
| Ledger Stock | 1.00 | @ | 1.10 |
| New B. B. Chips | .30 | @ | .35 |
| Manilas— | | | |
| New Env. Cut | 1.70 | @ | 1.80 |
| New Cuttings | 1.35 | @ | 1.45 |
| Print | Nominal | | |
| Bogus Wrapper | .40 | @ | .50 |
| Container | Nominal | | |
| Old Kraft Machine— | | | |
| Compressed bales | 1.10 | @ | 1.20 |
| News— | | | |
| No. 1 White News | 1.20 | @ | 1.30 |
| Strictly Overissue | .65 | @ | .70 |
| Strictly Folded | .42½ | @ | .50 |
| No. 1 Mixed Paper | .32½ | @ | .40 |

# The Two Purpose Elmendorf Tester



**The use of the Elmendorf Tester has been amplified to such an extent that it is now used as the standard tearing strength tester for materials far removed from what was originally contemplated.**

**These increased applications have made it necessary to further develop the tester by increasing its capacity for testing heavier materials. This is accomplished by adding to the Elmendorf Tester the Augmenting Attachment, which doubles its capacity. The Augmenting Attachment, developed at the Bureau of Standards, converts the Elmendorf Tester into two instruments.**

**The Augmenting Attachment is a carefully calibrated weight, that fits into the pendulum of the instrument. This weight is easily attached and removed. The jaws of the instrument are equipped with pins to give greater holding power and an anchoring strip is furnished to hold the instrument in position for testing work.**

**Every Elmendorf Tester can be fitted with the Augmenting Attachment.**

***Write for Leaflet 17A***

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**THWING INSTRUMENT COMPANY**
**3341 Lancaster Ave., Philadelphia, U. S. A.**



# PAPER TRADE JOURNAL

ESTABLISHED 1872

SIXTY-THIRD YEAR

THE INTERNATIONAL WEEKLY OF THE PAPER AND PULP INDUSTRY AND THE PIONEER PUBLICATION IN ITS FIELD

Published Every Thursday by the LOCKWOOD TRADE JOURNAL CO., Inc.

GEO. S. MACDONALD, President. J. BANNINGA, Sec.-Treas.

Published at 34 No. Crystal St., East Stroudsburg, Pa.
Executive and Editorial Offices: 15 West 47th Street, New York
*Chicago Office:* 123 West Madison St.


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